Office of Computers and Business Equipment, USDOC, November 1999

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EXPORTIT EUROPE

HIGHLIGHTING: GERMANY AND THE UNITED KINGDOM

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This report was prepared by Danielle Kriz and Duaine Priestley, International Trade Specialists, Office of Computers and Business Equipment, Technology and Aerospace Industries, Trade Development, International Trade Administration, U.S. Department of Commerce, Washington, D.C.

Research assistance was provided by student intern Amy Magdanz. Valuable comments were received from U.S. Department of Commerce colleagues in Brussels, Belgium; Frankfurt, Germany; London, United Kingdom; and Washington, D.C.; and the Information Technology Industry Council, Washington, D.C.

Information on the Office of Computers and Business Equipment can be found at exportIT.ita.doc.gov.

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FOREWORD

This report synthesizes market research and analysis undertaken by international trade specialists Danielle Kriz and Duaine Priestley from the U.S. Department of Commerce's Office of Computers and Business Equipment (Trade Development / International Trade Administration) in Europe in July 1999. They interviewed IT producers and consumers, trade associations, foreign government officials, and industry analysts in Brussels, Belgium; Glasgow (Scotland), London, and Cambridge, the United Kingdom; and Stuttgart, Frankfurt, and Munich, Germany. The work was actively supported by Department of Commerce U.S. and Foreign Commercial Service (US&FCS) market specialists in the three countries. Research focused on the status of IT industries and markets in Europe, particularly the United Kingdom and Germany, with special attention paid to factors influencing the adoption of the Internet and e-commerce in those countries.

This effort was carried out as part of a Department of Commerce Market Development Cooperator Program (MDCP) grant awarded in September 1998 to the Virginia Economic Development Partnership (VEDP), a state government public/private partnership to promote economic expansion within Virginia. The MDCP is a competitive matching grants program that builds public/private partnerships by providing federal assistance to nonprofit export multipliers such as states, trade associations, and chambers of commerce that are particularly effective in reaching small- and medium-sized enterprises (SMEs). These awards help the start-up costs of export marketing ventures, with the Department of Commerce playing an enabling role. This MDCP award assists the VEDP in its efforts to help Northern Virginia-based IT SMEs compete internationally, with an initial focus on the European market.

EXECUTIVE SUMMARY

Western Europe, notably Germany and the United Kingdom (UK), is a large and quickly growing market for information technology (IT) products and services. In fact, Germany and the UK are the first and second largest IT markets in Europe, respectively. Both countries lag behind the United States in IT adoption and use, particularly in use of the Internet and electronic commerce. However, they are increasing their IT investments, largely due to recent deregulation of their telecommunications services markets and growing Internet use. They offer many market opportunities for small- and medium-sized U.S. IT firms, whose IT products and services are highly regarded and sought after in Western Europe.

Certain Europe-wide IT-related regulations will affect U.S. firms' sales and business practices in any European Union member country. At the same time, Europe is a fragmented market. Each country, including Germany and the UK, has distinct market trends, factors of competitiveness, and opportunities in information technology. Industry experts interviewed in Europe in July 1999 concurred that for U.S. IT SMEs interested in these markets, partnering with either a similarly minded European SME, or with a larger firm or systems integrator, may be one of the best routes to penetrate these markets. Other options include the use of agents and distributors. Regardless of market entry strategy, various public- and private-sector agencies in both Europe and the United States exist to assist U.S. SMEs in their market entry endeavors.

INTRODUCTION

This report provides an overview of the information technology (IT) industries and markets in Europe, with a focus on the United Kingdom and Germany. Special attention was paid to factors influencing the use of the Internet and the adoption of electronic commerce in those countries. The research centered on information relevant to U.S. small- and medium-sized enterprises (SMEs) in the IT industry trying to enter these markets. Information gathered from on-site interviews is supplemented with data from market research firms and an extensive review of available literature.

U.S. businesses increasingly view Western Europe as a single regional market that encompasses more than 370 million people and a gross domestic product (GDP) second only to the United States. Through a number of initiatives, including the implementation of the single monetary system, the Euro, the European Union has made significant strides in integrating its fifteen economies. In spite of integration, for a variety of reasons, including differences in levels of infrastructure development, macroeconomic factors, business cultures, and national languages, it remains a fragmented market. U.S. businesses are advised to pursue a single-market approach when considering Europe, but with a sub-regional perspective. This is particularly true for the information technology market.

IT Spending Per Capita, 1997

	Population (M)	% World Pop.	GDP Per Capita ($)	IT Spending Per Capita ($)
United States	268.0	4.6	29,697.5	1,197.9
EU-15 Countries	375.3	6.3	21,921.4	468.8
Austria	18.4	0.3	20,577.5	630.8
Belgium	10.2	0.2	28,069.4	576.6
Denmark	5.3	0.0	35,502.4	886.8
Finland	5.1	0.0	26,973.8	615.7
France	58.5	1.0	27,882.3	580.7
Germany	84.1	1.4	30,248.5	533.9
Greece	10.6	0.2	9,779.0	80.4
Ireland	3.6	0.0	20,402.2	338.6
Italy	57.5	1.0	20,192.5	298.6
Netherlands	15.7	0.3	27,164.7	647.5
Portugal	9.9	0.2	11,434.6	115.5
Spain	39.2	0.7	15,602.2	181.4
Sweden	8.9	0.2	24,709.6	953.2
United Kingdom	58.6	1.0	20,477.7	698.7

Source: International Data Corporation

CHAPTER 1: EU TRADE AGREEMENTS AND REGULATIONS

The 15 countries of Western Europe that comprise the European Union (EU)[1] formed a common market to allow the free flow of goods, services, and workers among EU countries. To facilitate this union, EU member states implement certain common regulations, although they also may impose certain country-based practices and regulations. The following summaries cover EU-wide regulations that can affect U.S. IT firms doing business in Europe.

- As a customs union, the EU maintains common external tariffs, so goods exported to any EU country from a non-EU trading partner face the same duty rate. EU tariffs on most IT products are very low and will be zero as of January 2000 (see discussion on the Information Technology Agreement below). Trade among EU members in all products is duty free.

- The European Commission represents the 15 EU members in international negotiations and agreements, and the EU members enter into international trade agreements as one block. U.S. firms should expect consistent treatment in all EU countries regarding the EU's trade agreement commitments.[2] The EU recently entered into some IT-related trade agreements.

- Although member states retain autonomy over most internal affairs, the European Community[3] issues certain legislation obligatory for all EU members in areas where it is better placed than individual member states to take effective action, such as in policies to facilitate trade among member states. U.S. firms must be cognizant of Community legislation, namely directives, affecting the IT industries and markets of all EU countries.

Trade agreements and Community legislation dealing with IT-related issues that may affect U.S. IT firms' business decisions in European markets are summarized below. Sources and contacts for further information on these agreements and directives can be found in the appendix.

[1]The EU-15 are Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden, and the United Kingdom.

[2]However, member states' implementation schedules may differ.

[3]On behalf of the European Commission, Parliament, and Council.

IT-RELATED TRADE AGREEMENTS SIGNED BY THE EU

- Information Technology Agreement (ITA)
- Agreement on Basic Telecommunications Services (BTA)
- U.S.-EU Mutual Recognition Agreement (MRA)

EUROPEAN COMMUNITY DIRECTIVES

Directives Affecting IT Goods

- Electromagnetic Compatibility (EMC) Directive
- Low Voltage Directive
- Radio and Telecommunications Terminal Equipment (R&TTE) Directive
- Directive on Waste from Electrical and Electronic Equipment (WEEE) (pending)

Directives Affecting IT Services

- Data Privacy Directive
- Telecommunications Directive
- Directive on Certain Legal Aspects of E-Commerce (pending)
- Directives on Digital Signatures and Encryption (pending)

TRADE AGREEMENTS AFFECTING EUROPEAN IT MARKETS

The EU is a signatory to three recent IT-related trade agreements that will provide U.S. IT firms increased access to the 15 EU member states' markets, the Information Technology Agreement (ITA), the World Trade Organization (WTO)'s Agreement on Basic Telecommunications Services, and the U.S.-EU Mutual Recognition Agreement (MRA). These are summarized below.

Information Technology Agreement

As an ITA signatory, the EU will eliminate on January 1, 2000, its common external tariffs on a wide range of IT products, including computers, software, electronic components, and networking and telecommunications equipment. This will benefit U.S. firms that export products covered under the ITA to any EU country.

Agreement on Basic Telecommunications Services

The EU is a signatory to the World Trade Organization (WTO)'s Agreement on Basic Telecommunications Services, or Basic Telecommunications Agreement (BTA), which entered into force in February 1998. The BTA aims to provide foreign telecommunications carriers access to signatories' local, long-distance, and international service markets via all network technologies (wireline, cellular, microwave, and satellite), either on a facilities basis or through resale. The agreement also aims to ensure that foreign investors can acquire or hold a significant stake in signatories' telecommunications companies, or establish their own companies in those markets. It obligates signatories to implement procompetitive telecommunications regulations.

The EU's commitments under the BTA open its markets to foreign competition. However, most of these commitments mirror steps already taken by its member states through intra-EU negotiations and the implementation of telecommunications-related directives, the most recent of which, the EU Telecommunications Directive, is summarized below. U.S. and European officials report that the progress of telecommunications services liberalization in Europe has been good overall. The status of liberalization of the German and UK telecommunications services markets is detailed in Chapters 3 and 4, respectively.

U.S.-EU Mutual Recognition Agreement

The U.S.-EU MRA, which entered into force in December 1998, is intended to allow products or processes in certain regulated sectors to be tested and certified in the United States to EU standards, and vice versa. The MRA aims to reduce the cost of, and the time required for, testing and certification procedures for U.S. and EU firms selling in each others' markets. Three of the six sectoral annexes to the MRA apply to the telecommunications and IT industry; these three annexes focus on regulatory requirements for equipment attached to telecommunications networks, electromagnetic compatibility (EMC), and electrical safety.

The first two annexes provide for mutual acceptance of test data to U.S. and EU regulations during a two-year phase-in period which began in December 1998. Implementation of these annexes is proceeding as planned. After completion of the transition period, in addition to test data, certifications of conformity, performed by any facility in the United States or the EU recognized under the MRA, will be accepted in the importing market. Implementation of the Electrical Safety Annex has been delayed by a disagreement that has yet to be resolved concerning on-site inspection of test laboratories in the EU.

EUROPEAN COMMUNITY DIRECTIVES

Within the EU, the European Community is responsible for proposing and adopting legislation for member states. One form of such legislation is the directive, which is a binding piece of legislation that must be implemented by member states, although implementation need not be immediate. Directives define results to be achieved in a particular area while leaving it to national authorities to decide the form and means for achieving the desired aim. Member states must modify or introduce national laws to implement a directive, normally within two to three years after final adoption by the Community.

The Community has passed directives that affect certain segments of the IT industry. Other IT-related directives are pending. U.S. IT firms should be cognizant of these directives since they can affect doing business in the EU. U.S. firms doing business in the EU must follow current directives, and should be aware of pending directives because if or when such directives are adopted, U.S. firms must comply accordingly.

Notably, some directives affect the EU's emerging e-commerce and Internet markets. The U.S. government generally has taken a hands-off approach to regulating electronic commerce and Internet-related issues. U.S. government policy has been that governments should avoid undue restrictions on electronic commerce. Where government intervention is necessary, its role should be to ensure competition, protect intellectual property and privacy, prevent fraud, foster transparency, and facilitate dispute resolution, not to regulate.

By contrast, U.S. firms should be aware that the European Union has taken a more activist role in terms of legislation and regulation in these areas. Some recent directives or proposed directives may restrict firms' abilities to conduct business in these areas, or may add cost or efforts to comply with such laws. Broadly speaking, EU directives affect either IT goods or IT services.

Directives Related to IT Goods

Directives on Standards, Testing, and Certification of IT Products

The EU has three main standards-related directives affecting IT products, the Electromagnetic Compatibility (EMC) Directive, the Low Voltage Directive, and the new Radio and Telecommunications Terminal Equipment (R&TTE) Directive. The Community has issued these directives to try to harmonize the 15 member states' requirements for electrical and electronics products. These directives affect all relevant U.S. products exported to EU member countries. Products must be affixed with the "CE" mark before entering the EU market to indicate conformity with these directives.

Electromagnetic Compatibility (EMC) Directive (89/336/EEC)

This directive mandates that any electrical or electronic product sold in the EU must not emit electromagnetic disturbances that can disrupt or harm networks or nearby equipment. Further, products themselves must, to a degree, be immune from electromagnetic interference. IT products meet this directive if they comply with the international standards CISPR 22 (emissions) and CISPR 24 (immunity).

Low Voltage Directive (73/23/EEC)

This directive addresses electrical safety issues to ensure that products do not harm people who may come into contact with them. IT products meet this directive if they comply with the international standard IEC 60950 (safety).

The EMC and Low Voltage Directives are horizontal directives, meaning that they cover all equipment and cite standards that apply to specific products (e.g., CISPR 22, CISPR 24, and IEC 60950 for IT equipment). U.S. IT producers should be aware that European standards-setting bodies have an ongoing program to develop new standards for the EMC and Low Voltage Directives, so requirements may change. See the appendix for details.

Radio and Telecommunications Terminal Equipment (R&TTE) Directive (99/5/EC)

The R&TTE Directive introduces wide-ranging changes to the EU's approval process for telecommunications and radio equipment. The R&TTE Directive replaces the current approval regime for telecommunications terminal equipment, the Telecommunications Terminal Equipment (TTE) Directive. The R&TTE Directive is considered easier, less costly, and more streamlined than the TTE Directive, because it allows compliance through a suppliers' declaration of conformity, as opposed to the TTE Directive's requirement of assessment and certification by third-party accredited labs. The R&TTE Directive also has a broader scope than the TTE Directive since it includes radio telecommunications terminal equipment. Such equipment previously was not covered by Community directives, but instead was covered by individual member states' (often divergent) regulations.

The R&TTE Directive must be fully implemented by EU member states by April 7, 2000.

Directive on Waste from Electrical and Electronic Equipment (WEEE) (pending)
In 1998, the Commission issued drafts of a directive on waste from electrical and electronic equipment. The proposed directive aims at "the prevention of waste from electrical and electronic equipment" and "minimizing the risks and impacts to the environment associated with the treatment and disposal of end-of-life electrical and electronic equipment."[4] Its basic provisions are as follows: it would ban electronic products containing lead, mercury, cadmium, hexavalent chromium, and halogenated flame retardants as of January 2004; it would require plastic products to contain 5 percent recycled plastic by January 2004; and it would require producers to recover from private households and dispose of, at their own expense, used equipment. The directive would apply to virtually all electronics products on the EU market, including IT and telecommunications equipment. It may be adopted as early as 2000. However, this draft directive has been opposed by both U.S. and European industry, and it may be substantially changed or delayed.

Directives Related to IT Services

Data Protection Directive (95/46/EC)
The United States and the EU take two very different approaches to protecting personally identifiable information. Although privacy legislation has been proposed, industry self-regulation is the preferred data protection method in the United States, while the EU approach is typified by the Directive on Data Protection.[5] This directive aims to establish a regulatory framework to guarantee the free movement of personally identifiable data within the EU through the coordination of national laws, and protect individuals with respect to the "processing" of their personal information.[6] The directive is extraordinarily comprehensive, applying to manual and automatic processing of data and all organizations holding personal data. It excludes from its reach only data used in the course of purely personal or household activity. It was to be implemented by EU member states by October 1998.[7]

Under the directive, the European Commission may cut off transfers of personal data to countries whose data protection practices it does not deem adequate. Since many U.S. companies receive countless data transfers from their European offices, partners, and other sources, the directive could seriously affect business operations and trade between the EU and the United States. The European Commission and the U.S. Department of Commerce have sought to find a way to facilitate compliance by U.S. organizations with the directive. Under the "safe harbor" proposal, still under discussion, U.S. organizations that adhere to certain data

[4]Draft WEEE Directive, article 1.

[5]The Data Protection Directive grows out of Europe's historical and legal traditions. Protection of one's personal information is considered a basic human right in Europe and is codified in the European Convention for the Protection of Human Rights and Fundamental Freedoms.

[6]Personally identifiable information is defined as information relating to an identified or identifiable natural person.

[7]There is a grace period for member states to bring their national privacy laws into conformity with the directive. To date, only a handful have done so.

protection principles would be presumed adequate by the Commission and data transfers would continue uninterrupted to those firms.

U.S. firms planning to hold or transmit personally identifiable data within or to/from the EU may need to alter their business practices to adhere to the Data Protection Directive. Industry observers in Europe note that some companies deal with the directive in their electronic communications simply by not sending personal data over the Internet, such as by using invoices in e-commerce transactions. It is important to note that many questions remain about the directive and its provisions are considered vague and difficult to understand.

Telecommunications Directive (96/19/EC)[8]
The adoption of the Community's directive on "full competition" in telecommunications services in March 1996 was an important event in EU liberalization efforts. This directive required member states to abolish all special and exclusive rights related to nationally owned service providers, and to open all telecommunications services markets, including related publically owned network infrastructure, to competition from both domestic and foreign firms by January 1, 1998.[9] New service providers were granted the right to build their own telecommunications infrastructures. Member states also are required to establish regulatory authorities and frameworks independent of service providers, and to use transparent and nondiscriminatory regulations.

The Commission has been monitoring closely the implementation of these liberalization and harmonization rules at the national level. Independent regulatory authorities, similar to the FCC, have been established in all countries. The status of liberalization of the German and UK telecommunications services markets is detailed in Chapters 3 and 4, respectively.

Directive on Certain Legal Aspects of E-Commerce (pending)
The European Commission recently proposed a directive to create a comprehensive legal framework for the conduct of electronic commerce within the EU. The Commission states that its aim is to ensure that "information society services" can benefit from the EU single market principles of free movement of services and freedom of establishment. The Commission addresses issues such as electronic contracts, liability of intermediaries, and enforcement of rights. One issue the Commission is attempting to address in its debates over regulating e-commerce is whether the consumer protection laws in the country where goods or services are purchased, or those in the country where an e-commerce site is located, should apply.

The pending status of a directive on electronic commerce has created a feeling of uncertainty within the EU, particularly among IT-related firms, on the future of e-commerce in the region. Firms are unsure how to implement their e-commerce strategies in the absence of a decision on the application of consumer

[8]Directive 96/19/EC amends Directive 90/388/EC of 1990 regarding the implementation of full competition in telecommunications markets.

[9]Greece, Ireland, Luxembourg, Portugal and Spain were allowed exceptions to the implementation deadline of January 1, 1998. Spain authorized full competition on December 1, 1998, and Ireland on January 1, 1999. The remaining three countries are allowed exceptions until 2003.

protection laws, as well as a decision on if or how e-commerce will be taxed. Industry observers believe this state of uncertainty is hindering e-commerce adoption in the EU. This directive is due for approval during the first half of 2000.

Directives on Digital Signatures and Encryption (pending)

The Commission has stated that it believes that the advantages of e-commerce cannot be fully realized in the absence of secure networking environments, and as such it also has begun work on a common framework for security issues, namely digital signatures and encryption. This initiative was a response in part to the announcements by Germany and Italy on their intention to introduce specific regulations on digital signatures, and the consideration by other EU member states of similar policies. The Commission felt that if such national policies were enacted, divergent legal and technical regulations would constitute a serious obstacle to the internal market and would hinder the development of new economic activities linked to e-commerce.

Proposed Directive on Digital Signatures

Work on a directive on digital signatures is furthest along of the two. The Commission published a proposal for a directive for a common framework for digital signatures in May 1998, with minimum rules concerning security and liability. The main elements of the proposed directive are the use of certification service providers, the liability of such providers for the validity of a certificate's content, and legal recognition of digital signatures, all within a technologically neutral framework. This directive is expected to be completed by the end of 1999.

Proposed Directive on Encryption

Work on a directive on encryption is in a more nascent stage. The Commission has announced its intention to prepare a policy aimed at guaranteeing the free movement of encryption technologies and products.

CHAPTER 2: OVERVIEW OF THE EUROPEAN INFORMATION TECHNOLOGY MARKET

TELECOMMUNICATIONS

Deregulation, privatization, and liberalization of the telecommunications services industries are having a profound affect on IT growth in Europe. European member states are implementing the 1996 Telecommunications Directive (summarized in Chapter 1), which is having a positive ripple effect on IT spending and the introduction of new and innovative products. The overall size of the European telecommunications market is estimated to be growing at about 8 percent a year, with the top six markets being the UK, Germany, France, Italy, Spain and the Netherlands. Total growth is expected to reach $246 billion in these six markets by 2005. Most of Europe's telecommunications growth will come from increases in the demand for wireless communications.

Mobile telephone use in Europe is high, and mobile phone revenues are being driven by the exceptional rise in the number of subscribers. From 1997 to 1998, mobile phone penetration in Europe increased 67 percent to reach 92 million subscribers. By the end of 1999, that number is expected to exceed 100 million, nearly one quarter of Europe's population. The Global System for Mobile Communications (GSM) standard is used throughout Europe.

The use of Internet-accessible and "smart" handheld devices that can transmit and receive data and graphics, as well as voice, in Western Europe is expected to grow significantly well into the next decade. Market demand is expected to increase greatly when a new standard, the Wireless Application Protocol (WAP) is introduced. The protocol will allow Internet content to be tailored for display on mobile telephones, pagers and other wireless devices by stripping out the graphics that are bandwidth intensive. Other technologies, such as General Packet Radio Service (GPRS), will facilitate demand for wireless communications by enabling faster transfer rates of data via mobile phone.

European Penetration Forecasts: Mobile GSM Phones

Country	1998	1999	2000	2001
France	18.0	24.6	29.6	34.0
Germany	17.9	26.0	34.0	41.1
Italy	34.8	42.7	49.6	56.4
Norway	47.6	54.0	59.2	63.8
Spain	17.6	24.7	30.6	35.8
Sweden	52.5	61.0	68.5	74.2
United Kingdom	22.8	32.7	40.6	48.1

Source: International Data Corporation

Demand for cable TV grows...

The ubiquity of cable television in Europe and the introduction of cable modem technology could presage enormous demand for data over cable services throughout Europe. Digital television (DTV) operators in Europe are upgrading their infrastructure and beginning to offer basic functionality such as e-mail through set-top boxes. Moreover, European consumers already use cable TV to gather information. In the UK, more than 61 percent of the adult population uses the Teletext on-screen information services. Industry experts estimate that by 2010, nearly 80 percent of Europeans will use digital TV.

European Penetration Forecasts: Cable T.V.				
Homes (%)	1998	1999	2000	2001
Belgium	94.0	94.0	94.0	94.0
France	12.0	14.0	16.0	18.0
Germany	57.0	58.0	59.0	60.0
Netherlands	95.0	96.0	96.0	96.0
Norway	42.0	43.0	44.0	44.0
Spain	2.0	3.0	5.0	8.0
Sweden	40.0	41.0	41.0	41.0
United Kingdom	12.0	15.0	17.0	18.0
Total Europe	28.0	29.0	30.0	31.0

Source: Morgan Stanley Dean Witter Research

Cable modem technology will facilitate the use of media and content-rich applications, especially as digital television becomes more affordable. Consolidation in the UK cable TV market may provide the necessary economies of scale for further infrastructure and equipment investments, therefore making cable modem technology more readily available. However, like most of Europe's IT sector, deployment of cable modems will likely be fragmented, with the initial growth areas in densely populated urban areas in the smaller Benelux countries, followed by the larger countries, where cable modem growth will shadow the continued introduction of digital TV.

European Penetration Forecasts: Interactive Digital T.V.				
(% of Homes)	1999	2000	2001	2002
France	10	12	13	14
Germany	1	2	4	5
Italy	2	3	4	5
Spain	4	6	7	8
United Kingdom	3	13	21	29
Europe	2	4	7	9

Source: Morgan Stanley Dean Witter Research

The business of IP telephony....

Another area of enormous growth potential in Europe, particularly for businesses, is voice over Internet protocol (VoIP) or Internet telephony. Cost reductions, increased data traffic due to the rapid growth of the Internet, and further convergence of voice and data could make IP an enormous success in Europe, especially since it is much more cost effective for users than public switched telephone networks (PSTN).

Western European IP Telephony Market Forecast, 1998-2003						
	1998	1999	2000	2001	2002	CAGR 1998-2003
Revenue ($M)	0.5	8.2	123	491	1,467	
Growth (%)	N/A	1,543	1,398	299	199	501%
Minutes (M)		31.6	550	2,393	7,755	
Growth (%)	N/A	1,872	1,643	335	224	580%

Source: International Data Corporation

Investment costs to build a private IP telephony network are considerably less than traditional PSTN infrastructure, and companies have the added advantage of adding network access points and service scalability, including multimedia. One European consultancy estimates that by 2003, the privately managed IP networks will generate US$2.5 billion. British Telecom (BT) is the most aggressive European telecommunications operator, as it is expanding into continental Europe.

THE INTERNET

The demand for Internet access and the potential of electronic commerce, particularly for business-to-business transactions, is also contributing to increased IT spending in Europe. Increasingly, European business leaders

recognize the importance of being an Internet "player" and are making IT investment decisions based on the need to enter the electronic commerce market. While Internet use doubled in Europe between 1997 and 1998, it remains low compared to the United States (8 percent vs. 52 percent of population) and the cost of Internet access is high. European Internet users typically pay more than twice the U.S. average for access to the Internet. They are charged by the minute for local calls, unlike the United States, where local calls are free. Still, Internet use in non-English languages is expected to grow dramatically over the next several years.

Internet Penetration in Europe, 1998

	Internet Users (M)	Total Pop. (M)	Proportion of Pop. (%)
Austria	0.54	8.1	6.7
Belgium	0.79	10.2	7.7
Denmark	0.95	5.3	18.0
Finland	1.57	5.1	30.8
France	2.79	58.6	4.8
Germany	7.14	82.1	8.7
Greece	0.24	10.5	2.3
Ireland	0.26	3.7	7.1
Italy	2.14	57.6	3.7
Netherlands	1.96	15.3	12.8
Norway	1.34	4.4	30.5
Portugal	0.26	10.0	2.6
Spain	1.98	39.3	5.0
Sweden	2.58	8.8	29.3
Switzerland	1.00	7.1	14.1
United Kingdom	8.10	58.1	13.9
EU-15	***33.6***	***384.2***	***8.8***

Source: Morgan Stanley Dean Witter Research

The Scandinavian countries lead all other European countries and the United States in per capita use of the Internet. However, other regions in Europe are closing the gap. The emergence of subscription-free Internet Service Providers (ISP) in the UK is beginning to accelerate the growth in the number of users. Firms in a variety of industries are devising new pricing schemes, such as flat rate calls, to make access more affordable. For example, UK retailers, media companies and banks are offering free Internet access to consumers in order to position themselves in the e-commerce game and to build brand loyalty. Recent trends suggest that the trend is also occurring in the rest the continent. The ISP market in Western Europe is expected to reach nearly $18 billion by 2004, an annual growth rate of 32 percent. Broadband Internet access is expected to experience significant growth, as new technologies such as cable modems come to market, along with Digital Subscriber Line (DSL) and mobile Internet access.

Another factor fueling the rapid adoption of the Internet in Europe is the winding down of Y2K-related expenditures. Now that companies are in the final phases of their Y2K remediation, European companies are expected to focus on integrating Internet and electronic commerce applications into their core business functions. Business-process re-engineering will likely be the mantra of European businesses in the near term, especially as companies integrate IT spending as a central part of their overall budgets. Internet-based applications hosting are expected to take off in Europe in the near term. Germany's SAP recently announced its first endeavor to make its enterprise resource planning software, R3, available over the Internet. SAP representatives indicated that these services will target the small business sector.

ELECTRONIC COMMERCE

While Europe currently trails the United States in the adoption of Internet technologies, it is closing the gap quickly. The development and adoption of Internet and electronic commerce in Europe is following a similar pattern as the United States experienced.

Telecommunications deregulation is the first stage in the rapid expansion of Internet use. The second stage-- Internet software and services-- is the next area of significant growth for Europe.

Worldwide Internet and E-Commerce Services Spending by Region, 1998-2002 ($M)

	1999	2000	2001	2001	CAGR
Europe	2,503	4,277	7,037	10,81	67
Asia/	779	1,419	2,360	3,352	65
Japan	890	1,578	2,622	4,563	70
ROW	667	1,170	1,888	2,856	66
United	7,009	10,55	15,60	22,07	50
Total	11,84	18,99	29,51	43,65	57

Source: International Data Corporation

Large established companies like SAP are gearing up for Internet applications, as are a legion of small software companies and consultants.

European companies are behind in the third stage, content and aggregation. American portals like Yahoo! and AOL already have a significant presence in Europe and will make formidable competitors for home-grown European companies. However, because of language and cultural factors, European portals should become more competitive as they build brand loyalty.

European companies learn from the United States...

Like portals, electronic commerce is a scalable business that offers great potential. Despite being one to two years behind the United States in implementing electronic commerce solutions, European companies stand to learn a great deal from U.S. companies and avoid some of the mistakes made along the path to widespread use of the Internet. However, until European telecommunications operators and ISPs figure out a way around metered local phone calls, business-to-consumer electronic commerce will suffer. Business-to-business (B2B) and business-to-consumer electronic commerce are the last stages of the Internet revolution to hit Europe and only a few companies have reached this stage of development.

Between 1998 and 2003, global electronic commerce is expected to grow from US$5.6 billion to more than US$430 billion, an average annual growth of 138 percent. Given the fragmented nature of the European market, growth of electronic commerce will differ among regions, and each country will present U.S. companies with different challenges. The Scandinavian countries have a higher Internet penetration rate than the United States and were early adopters of some of the most innovative uses of the Internet. Countries such as the UK, Germany and the Benelux nations could provide the greatest opportunities for electronic commerce, given advances in telecommunications market liberalization, relatively large markets and their receptivity to technology. The rest of Europe, including France, Italy, Spain, Portugal and Greece, due to relatively low levels of Internet use and PC penetration rates, will lag behind the rest of Europe.

Like the United States, the greatest potential for electronic commerce is in business-to-business applications. As more European corporations adopt e-commerce solutions as a part of their core business functions, the market will experience considerable growth. Business-to-government services could expand dramatically, as European administrative bodies automate their filing processes, e.g., shipping and customs declarations. Small European companies are eager to reduce their administrative operating costs.

An uncertain regulatory environment could hamper the growth of electronic commerce in Europe. Complying with rules on data privacy, consumer protection, and domain name registration remains cumbersome or expensive. The European Commission also is considering a proposal to force third parties to collect the value-added tax (VAT) on products sold over the Internet.

PERSONAL COMPUTERS AND NETWORKS

The personal computer (PC) market in Europe is expected to continue its robust growth through 2002, fueled in part by the Internet and the falling prices of PCs. Other factors influencing increased PC penetration in Europe are concerns about the Y2K bug, which has spurred increased spending on new computers that are Y2K compliant.

European Penetration Forecasts: PCs in Homes

(%)	1999	2000	2001	2002
Denmark	50	50	55	60
Finland	50	56	63	69
France	26	28	31	34
Germany	46	52	58	65
Italy	20	22	23	25
Netherlands	53	58	64	70
Norway	53	53	60	67
Sweden	53	56	62	68
United Kingdom	39	44	49	55
Average	37	41	46	51

Source: Morgan Stanley Dean Witter Research

Marketing plans that are currently used in the United States, but yet to be tested in Europe, include bundling heavily discounted PCs with long term (3 years) Internet access. If similar plans are adopted in Europe, PC penetration could increase even more than currently projected.

Spending on the use of intranets and extranets should increase from US$720 million in 1999 to over US$5.2 billion by 2003. Increasingly, European companies are trying to maximize the benefits of their internal information systems and the knowledge base of their staff through the use of intranets. Moreover, companies are implementing extranets in their business relationships with suppliers. The UK and Germany are expected to lead the growth in these two areas.

CHAPTER 3: GERMANY

GERMANY 1998		
Basic Indicators	Total Population (Millions)	82.04
	Total GDP ($ Billions)	2,102.8
Main Telephone Lines	Total (Millions)	46,500
	Per 100 Inhabitants	56.68
Cellular Mobile Subscribers	Per 100 Inhabitants	16.97
Telecommunications Revenue	Per main line $	1,075
Telecommunications Investment	Per main line $	189
Internet	Total Users	6,000,000
	Hosts per 10,000 Inhabitants	176.74

Source: International Telecommunications Union

INTRODUCTION: THE OVERALL IT MARKET AND INDUSTRY

Germany is Europe's largest IT market--

The German IT market is the single largest IT market in Europe. Valued at US$47 billion in 1999, it represents approximately 25 to 30 percent of the European IT market. From 1998 to 1999, the German IT market grew 12.4 percent and is projected to continue to grow at more than 10 percent annually. If the telecommunications market is added, the combined market reached US$91 billion in 1999 and is expected to grow by 7 percent in the near future.

Following reunification, Germany's industrial sector experienced a period of economic stagnation, and overall investment expenditures, especially in the public sector, remain low. Nonetheless, private-sector IT spending has increased, led by the banking and finance sectors, Germany's most IT-intensive industries. Spending slowed somewhat in 1999 as companies focused their IT budgets on addressing Y2K issues and integrating the Euro into the common market system. After 2000, IT spending in Germany is expected to rise, as noted above.

--but its IT adoption lags that of the United States.

Germany lags behind the United States in IT adoption and use, and the market remains underdeveloped. According to IDC, IT spending per capita in Germany in 1997 was $534, less than half of that in the United States, underscoring that the German IT market has not yet reached saturation. PC and Internet use are not common in daily life. Germany's PC penetration rate is 30 PCs per 100 people, compared to more than 50 per 100 in the United States. At the end of 1999, 20 percent of Germans over the age of 15 had Internet access, translating into 17 million German Internet users in the year 2000. In 1998, only 30 percent of German households had a computer, although the increasing use of the

Internet is expected to drive this rate to nearly 50 percent by 2003. Computer use in Germany's educational system also is relatively low, although an increasing number of schools, including universities, are equipped with PCs.

Fewer companies are networked in Germany than in the United States, although network use is growing, mostly in larger firms. More and more large firms are establishing web sites, but these are usually static attempts to create a corporate web presence. The use of IT in German SMEs is even lower. German sources report that, although SMEs may have e-mail, few use intranets or have web sites, and the use of extranets is virtually nonexistent. Industry sources report that many German companies in the larger, more global industries, such as automobiles, chemicals, banking, and financial services, are very well networked, similar to their foreign counterparts.

It is generally accepted that Germany's Internet use, as in most of Europe, is one to two years behind the United States. A variety of reasons have accounted for this lag, including low PC penetration and high local telephone rates and ISP charges. In addition, the Internet is seen primarily as a source of information, not an e-commerce platform in Germany. The limited use of credit cards in Germany is a main impediment to business-to-consumer e-commerce, and security concerns also loom large. However, some of these factors are changing, as detailed below, and the use of the Internet and electronic commerce in Germany is expected to grow rapidly. Rising integration of these technologies into German life will offer increased opportunities for U.S. firms to serve these markets.

The German government is not a large-scale user of IT. In fact, only last year did the Ministry of Transport implement a local-area-network (LAN). Government web sites are used for basic information dissemination. The government does not use e-commerce for procurement or contracting of services and is only just beginning to interact with businesses and individuals electronically.

Why don't many Germans use IT?

For a number of reasons, Germany has been slow to integrate IT into core business processes. For one, the German government has not taken a leading role in encouraging IT use. It traditionally has not provided incentives, such as tax breaks, for firms to implement new technologies. In addition, as noted above, the German government itself has not been an intensive user of IT. In the United States, government IT use, particularly its use of electronic procurement and contracting, has helped propel private-sector IT adoption.

Many large German firms have conservative attitudes toward IT. In contrast to the United States, where many firms seek to implement new technologies, German firms prefer to improve upon their installed technologies. A notable exception is the banking industry, Germany's earliest adopter and most intensive end-user of IT. In fact, many German banks' technologies now are relatively old, and they are eager to upgrade them. However, they have not been able to devote their IT budgets to such upgrades in recent years because they have focused on the Y2K issue and the implementation of the Euro. As a result, pent-up demand for new technologies is strong in German banks.

High PC prices in Germany have kept home PC penetration low, which in turn is a factor in Germany's relatively low home Internet use. In addition, local telephone calls in Germany are metered, which discourages households from web surfing, as each minute adds up. However,

prices for hardware as well as connection fees have decreased dramatically in recent months.

IT use and investments are growing

Germans, however, increasingly are adopting IT, particularly as German firms realize how important IT is to their competitiveness. In particular, the banking sector is investing heavily in new technologies to retain its global competitiveness. German firms realize the need to be networked to increase their efficiency and many are implementing LANs and investing in new software products as well as systems integrators and related services such as testing, installing, training, and maintenance. To implement more quickly and effectively their IT strategies, many German firms, including SMEs, are outsourcing their software and IT services needs, which is also providing a market for software developers and systems integrators. German firms also are realizing the need to establish an Internet presence. SMEs have been slower than large companies to adopt IT, but German industry observers believe that within the next two years German SMEs will be forced to invest further in IT for survival as the corporate world becomes more globalized.

Decreasing prices for both IT services and equipment are another driving force in Germany's IT spending. Growing competition in the telecommunications industry as Germany implements the EU Telecommunications Directive (see Chapter 1 for a summary of the directive) has ushered in many new competitors in telecommunications services. These firms are introducing leading-edge technologies to the market.

This competition also is driving down telecommunications tariffs. Cheaper access to the Internet is in turn compelling increased network use, and prices of networking equipment also are falling. Security-related technologies are being adopted with increasing frequency as networked German companies face growing security concerns, such as viruses and blatant network attacks, and require secure transactions. Firms also are eager to address the security concerns which strongly hinder consumer e-commerce use. Network security is seen by some observers as one of Germany's potentially biggest IT-related markets, particularly given the legal requirement to protect personally identifiable data in Germany, as detailed below.

The German government realizes Germany's slow pace in adopting IT and is attempting to address the problem. In September 1999, it announced an ambitious plan aimed at increasing IT deployment throughout the country. The plan includes quadrupling Germany's Internet penetration rate, bringing the latest technology, including the Internet, to German schools by 2001, training 40,000 new IT employees by 2003, and increasing by 40 percent the number of women employed in the IT industry during the next five years. The government realizes its own need to become networked, and part of its plan aims to increase government agencies' IT use by the second half of 2000.

The growing German IT market is served mostly by U.S. firms...

German firms do not play a dominant role as suppliers to the growing German IT market. A large portion of suppliers to Germany's IT market are U.S. companies. In fact, two of the top 10 major U.S. investors in Germany are in the IT industry, IBM and Hewlett Packard (HP). U.S. firms are competitive in all IT industry sectors in Germany and U.S. IT products are highly regarded in the German market. Because of this, Germany's technology trends are largely U.S. driven. As a result, Germany's increasing IT investments provide many opportunities for U.S. IT SMEs. German competitors are primarily

in the telecommunications equipment sector, such as Siemens, and the software sector, namely SAP and Software AG. DeutscheTelekom (DT) dominates Germany's telecommunications services market, although deregulation has introduced more competition in that market.

Nevertheless, small German IT firms are multiplying

Industry observers report that a large and growing number of small German IT firms are successful in the German market. IT-related research increasingly is performed in universities and small high-tech companies around Germany. Furthermore, regional economic development agencies are encouraging IT start ups. Germany is home to an estimated nearly 200 "incubators," or facilities that provide office space, office equipment, and business counseling to start-up firms, many of which are IT focused, particularly on Internet technologies. Many of these German IT SMEs are eager to partner with U.S. firms to serve both the German and U.S. markets.

As in the United States, Germany's IT firms have tended to cluster in certain parts of the country. The state of Baden-Wurttemberg in the southwest is one of Germany's main IT areas, home to large and small telecommunications companies, ISPs, and more than 3,000 software firms. SAP's headquarters are in Baden-Wurttemberg, as are the European headquarters of IBM and HP. Other areas with IT concentrations include Bavaria, with its capital Munich (home of Siemens), and the highly industrialized Rhine-Ruhr area in North-Rhine Westfalia, including cities such as Dusseldorf and Cologne (also the home of major international telecommunications and German insurance firms). Frankfurt, Germany's financial center, is strong in vertical IT end-user industries, such as banking and telecommunications. All of these locations maintain economic development organizations which assist start-up companies, both German and foreign. Extensive support programs are usually also available for companies which plan to set up operations in eastern Germany. For more information on such organizations, see the appendix.

What are some of the main technologies being adopted in Germany?

While many types of IT technologies are being adopted in Germany, some key technologies are of particular note and are discussed in more detail in the following sections.

In telecommunications, mobile communications, for both voice and data is growing quickly. ISDN use is notably strong, although Deutsche Telekom has started to promote Asymmetrical Digital Subscriber Line (ADSL) to business customers. Digital audio and digital video broadcasting (DAB and DVB) also are more common in Germany than the United States, creating a demand for set-top boxes with Internet access. However, the debate is still ongoing whether future connections to the world wide web will be primarily through the PC or the television – and set-top boxes.

In software, the Linux operating system is very popular in Germany's ISP and web communities, even more so than in the United States. Java is an up-and-coming technology that is just beginning to affect the German market.

TELECOMMUNICATIONS

Germany has the largest single telecommunications market in Europe and the third largest globally, after the United States and Japan. The German telecommunications market was valued at US$57.2 billion in 1998. Telecommunications services comprised 83 percent of this market, or US$47.6 billion.

Within the services market, fixed line services was the largest segment, valued at US$24.9 billion, followed by mobile services at US$10.3 billion and cable television services at US$2.4 billion. Telecommunications equipment sales were valued at US$9.9 billion.

Germans are avid users of various types of wireline and wireless telecommunications. Germany has one of the highest teledensity rates in the world, with a telephone penetration rate of 55.2 lines per 100 people. More than 50 percent of German households have cable TV access. In 1997, Germany had 27 ISDN connections per 100 inhabitants, compared to 4 per 100 in the United States. At the end of June 1999, 16.9 million Germans, or 20.6 percent of the population, were using mobile phones.

The market will grow rapidly...

Germany's telecommunications market is projected to grow rapidly, reaching US$71.5 billion in 2000 and US$85.3 billion in 2002. In just one year, from 1998 to 1999, the volume of telecommunications connections is expected to rise 20 percent. Increased competition and falling prices in telecommunications services, ushered in by Germany's implementation of the European Telecommunications Directive, will continue to drive growth in the services markets. This in turn is creating opportunities for telecommunications equipment and software vendors to sell the latest technologies to new services entrants as well as the incumbents that must upgrade their infrastructure to remain competitive. The continuous growth of Germany's telecommunications market will provide plenty of opportunities for U.S. SMEs.

...led by mobile communications...

Mobile communications are the fastest growing segment of Germany's telecommunications services market. Since Germany liberalized this sector in 1993, it has experienced double-digit growth rates. This trend is expected to continue, and the market is predicted to reach US$15 billion in 2000. Germany's Regulatory Authority for Telecommunications and Post anticipates that 21 million Germans, or one quarter of the population, will use mobile communications by the end of 1999. As a result, there are growing opportunities for SMEs who can create software applications and related technologies for mobile communications, although SMEs must note that GSM, the Europe-wide cellular phone standard, is used throughout Germany.

All major mobile equipment manufacturers supply the German market, with Siemens, Nokia, and Motorola-- which manufactures in Germany-- generally considered market leaders. Nokia, in connection with service provider E-Plus (recently acquired by France Telecom), plans to introduce mobile data transmission at a speed of 38.4 kbps at the end of November 1999, up from the current GSM rate of 9.6 kbps, underscoring that mobile data transmission is seen by many as one of the most important technology trends. However, mobile communications are an area that likely will see increased competition from the former state-owned monopoly and Deutsche Telekom (DT).

...and ISDN.

Germany has long been an avid user of ISDN, due to strong marketing by DT. Currently approximately 30 percent of German Internet users have ISDN connections, and the ISDN penetration rate in Germany is seven times that of the United States. ISDN use is expected to rise at double-digit rates as it increasingly is

replacing basic telecommunications networks in businesses and this trend is expected to continue as Internet use rises and applications needing high speed links, such as telecommuting and video conferencing, become more widespread. However, the advantage Europeans have in ISDN compared with the United States may make entry for U.S. firms in this market segment slightly more difficult.

Deregulation is stimulating competition...
Germany's deregulation and liberalization of its telecommunications markets during the last decade have driven increased competition and market growth. The German government opened mobile services to competition in 1993 and value-added services even earlier. The main impetus for the current competitive situation is Germany's liberalization of its fixed-line market. This process began in January 1998 when Germany implemented the EU Telecommunications Directive (summarized in Chapter 1), aimed at liberalizing European telecommunications markets, through its telecommunications act, Telekommunikationsgesetz (TKG). The TKG calls for the promotion of competition in the telecommunications services market and free choice for consumers among carriers.

...loosening Deutsche Telekom's grip on the market
The competitive landscape of the German telecommunications market has been reshaped. Deutsche Telekom's market share has fallen. Industry regulators report that DT now has 65 percent of Germany's domestic and international long-distance markets. Under the Telecommunications Directive, EU member states were to privatize their state-owned telecommunications monopolies-- in Germany's case, Deutsche Telekom (DT). This process has begun, although the German government retains a 72 percent share of DT. Nonetheless, the TKG has had far-reaching effects on DT's grip on the market. DT must provide its competitors with unbundled access to all essential facilities and services it uses or offers, including the wireline local loop.

Per the EU Telecommunications Directive, Germany also established an independent regulatory authority, the Regulierungsbehoerde fuer Telekommunikation und Post (RegTP),[10] to oversee market deregulation. DT and other dominant carriers must have their telephone tariffs approved by RegTP. RegTP issues licenses, assigns and supervises frequencies, imposes universal access obligations, and controls network access and interconnection.[11]

DT must sell off its cable TV business
The European telecommunications directive states that telecommunications monopolies must sell off their non-core activities. As a result, DT must divest itself of its cable television operations. Due to Germany's 50 percent cable penetration rate, there is intense interest in purchasing DT's cable. Competitors are eager to own cable not only to be able to provide Internet access but also to earn profits as cable operators. The most formidable candidates for acquiring DT's network include Bertelsmann/AOL and consortia consisting of all major players in the market.

Many new service providers have rushed in
Germany's telecommunications market is exploding due to deregulation. German industry representatives estimated that there were 1,000

[10] In English, Regulatory Authority for Telecommunications and Post.

[11] Detailed information on RegTP can be found on its web site, www.regtp.de, in German and English.

telecommunications service providers, 350 licensed carriers, and 89 carriers connected to DT in July 1999. Competition has driven down the cost of long-distance telephone calls an average of 70 percent since the start of deregulation. The market is open to foreign competition, and many firms competing in Germany are international, including MCI, Sprint, and AT&T, as well as France Telecom and Swisscom. Swisscom recently bought Stuttgart-based Debitel to penetrate Germany's mobile phone market.

For the most part, competition has brought only limited change to Internet access in Germany. Most telecommunications providers are focusing on competing on price and branding their core telephone services rather than on offering new, unproven Internet services. However, Forrester Research predicts this will change as the basic telecommunications services market becomes saturated and as firms introduce pricing and service plans to make the Internet more attractive to mainstream customers. In fact, the German fixed-line basic telecommunications services market already has become saturated. Since the beginning of 1999, the number of providers in this market segment has stabilized and mergers and acquisitions have increased as the market shakes out.

In addition, although local phone charges also have fallen, they have not dropped as radically as long-distance rates. Local calls remain metered, which impedes Internet demand. Nonetheless, hundreds of small German companies are entering the web hosting and ISP market. U.S. ISPs also are entering the German market, often on the heels of U.S. telecommunications infrastructure providers. Internet and e-commerce trends are detailed later in this chapter.

DT has successfully defended the lion's share of its business in the fixed network segment. DT is the only carrier with a nationwide infrastructure. Because DT owns the "last wireline mile" there are high barriers to entry in this market. Competitors must lease wires from DT or set up their own solutions to compete in the wireline local loop. Rivals have been circumventing DT's last mile by establishing alternate networks such as private local loops, using television cable and electricity lines, or laying their own fiber in sewage lines. The *Financial Times* reported that a small firm, Mobilcom, intends to lease a 3,400-kilometer fiber-optic network from a gas pipeline company to reduce its dependency on DT's lines. However, most of these technologies are in their infancy and their potential is not fully realized. U.S. SMEs with relevant leading-edge technologies are well positioned to exploit this need.

Most recently, RegTP auctioned off licenses for broadband wireless local loop networks, a technology which may be suitable to break DT's quasi-monopoly in the last mile to the consumer. Among the licensees were several U.S. firms, which may provide opportunities for proven suppliers to these companies.

Yet Germany remains a tough market to enter

Despite the opening of the German market to new competitors, market entry can be difficult. Industry observers report that DT is not very forthcoming in terms of administrative and operational procedures regarding its interconnection agreements. New competitors have complained that DT's charges for line access far exceed its costs. Industry consultants state that because the central government still holds a majority share of DT, regulators' decisions tend to favor the former monopolist.

High license fees and uncertainties about the new regulatory agency's processes and decision-making are other factors tempering market growth.

Industry observers see huge potential for U.S. SMEs

Nonetheless, industry representatives see a huge potential for U.S. SMEs in the German telecommunications product and service markets. German telecommunications industry consultants state that the needs and goals of telecommunications-related companies in Germany are the same as those in the United States, and that technologies succeeding in the United States will likewise succeed in the German market. Industry specialists state that SMEs usually penetrate this market most effectively as subcontractors or as partners, particularly with systems integrators. Firms interested in this market must keep in mind that services, as well as goods, must be localized for the German market. In addition, German consumers are extremely critical and generally conservative in accepting new services. Solutions must be customer-oriented, cost effective, and innovative, and providers must be able to offer 24-hour service.

Telecommunications infrastructure is in demand. Telecommunications providers are investing heavily in the latest technologies to consistently improve the quality, speed, and interconnection of their networks. Rival service providers continue to seek promising new technologies to circumvent DT's control of the last mile. SMEs have many opportunities to work as subcontractors to major infrastructure vendors such as Cisco, Alcatel, and Siemens. More and more U.S. firms are building telecommunications infrastructure in Germany, providing opportunities for U.S. SMEs to subcontract on these projects. Telecommunications-related software is in high demand. Because of the increasing competition in the wireless local loop, products and services for this segment are market growth areas in which U.S. firms, including SMEs, can compete.

Because the market for basic telecommunications services is saturated, market opportunities are greatest in value-added services, such as implementing billing systems, particularly as telecommunications providers offer various discounts and billing schemes to attract customers and begin to add Internet-related services to their portfolios.

As in all telecommunications markets, firms that can deliver the fastest bandwidth will be market leaders. Mobile applications, for both voice and data, are large growth areas. Opportunities exist in Germany for vendors of new transmission technologies, such as local multipoint distribution services (LMDS), to enable high-speed delivery of interactive broadband services at a low cost. Industry consultants report that a number of licenses for wireless LMDS frequencies recently have been awarded to SMEs. Services related to the Internet and e-commerce also are fast-growing markets, and those are detailed in the next section.

THE INTERNET

Internet use low but growing

According to a recent market research report, approximately 6.5 million Germans are active Internet users, and this number is expected to grow to 9.7 million in 2000. These numbers, which are very low compared to U.S. Internet use, reflect limited Internet adoption among many types of organizations in Germany. However, adoption rates are increasing in all sectors, and it is predicted that 27.4 million Germans will be active Internet users by 2002. Deutsche Telekom's subsidiary ISP, T-Online, dominates

German Internet access, with 2.5 million customers in 1999. AOL Europe, AOL's joint venture with Bertelsmann, is the second-largest ISP, with 800,000 customers.

The government aims to get itself on line

The German central government's use of the Internet is very limited. For the most part, forms cannot be filed electronically, and German government officials often do not give out their e-mail addresses. This is in contrast to the United States, where the U.S. government maintains electronic relationships with many of its suppliers, disseminates information via various web sites, and encourages forms, such as tax returns, to be filed electronically. However, the German central government's use of the Internet is predicted to rise for various reasons. Germany's 1997 Internet law allowed the granting of licenses for digital signatures, and as a result the government is beginning to accept certain forms and applications electronically. In fact, the government announced plans to increase its own Internet use as part of its new IT strategy promulgated in September 1999, including having the Finance Ministry use electronic tax statements by some time in 2000. AOL Europe recently offered free Internet access to German government officials to encourage their Internet use. Unlike the central government, sources report that many local German governments largely are on line.

...and it aims to increase IT use in German schools

Internet use in German schools and households also is relatively low. An estimated 16 percent of German schools are on line, compared to 80 percent in the United States. Schools are increasing their IT adoption, and the German government's ambitious IT strategy also includes plans to connect all German schools to the Internet by 2001.

Household Internet use is low, but expected to grow

Various factors keep Internet use in German households low. Relatively high PC prices have contributed to low PC home penetration rates, although PC prices now are coming down dramatically. As mentioned previously, Germans pay for local telephone access, which discourages web surfing. Reducing local call charges has taken the back stage to reducing long-distance charges in telecommunications competition, and local call charges remain at approximately DM 0.10 per minute (US$0.05). Home Internet use is expected to rise as telecommunications rates in Germany continue to fall.

High Internet subscription fees also have hindered home Internet use. However, a growing number of ISPs in Germany have announced intentions to offer subscription-free Internet access. Some industry observers expect Internet access to be free throughout Germany within the next year or two.

Business Internet use also lags, but interest is picking up

Internet use in German businesses is more widespread than in private homes but is not pervasive. Many large companies have e-mail and web sites; however, for the most part, these are static sites to establish an Internet "corporate presence" for image and prestige or for marketing purposes and do not provide interactivity with customers, suppliers, or allow for electronic commerce. Many firms realize that these static sites are not sufficient and are looking to expand their functionality. Many of the older, more conservative traditional German firms, such as in the machinery industries, are not on line at all. In fact, sources report that some German managers do not allow their employees to have Internet access. German SMEs also are

not very Internet focused. A recent study reported that less than 4 percent of German SMEs have web sites.

There are various opportunities for U.S. SMEs

The growing awareness among German businesses of the need to become more Internet savvy has created a rapidly growing market for Internet consultants, systems integrators, web designers, web hosting companies, software developers, and companies with related products and services. As would be expected, younger German firms are more avid Internet users, and many use systems integrators to develop their Internet strategies. U.S. SMEs may be able to take advantage of German firms' need for help getting onto the Internet.

As German firms expose their corporate networks to the outside, demand for security products and services, particularly encryption and digital signature products, is growing. U.S. suppliers currently dominate the German market for such products and the security market remains a lucrative one for U.S. firms.

Although Germany's Internet industry is dominated by DT's T-Online and other large ISPs such as AOL, smaller competitors are entering the market. Local and regional providers have rushed into the market in the wake of telecommunications deregulations and are gaining in importance and market share. In fact, hundreds of small German firms have entered the web hosting and ISP market. These Internet-focused German IT companies often subcontract to up-and-coming IT firms, which provides opportunities for SMEs. U.S. ISPs also have rushed into Germany, often in tandem with U.S. infrastructure providers. All of these ISPs seek cutting-edge technologies which U.S. SMEs can provide.

The wireline ISP market in Germany is already saturated. However, market analysts believe that good opportunities remain for ISP providers that compete in the wireless local loop. U.S. Internet service providers that do not establish a presence in Germany may have difficulty in penetrating this market, as customers prefer to have nearby, constant access to their ISPs if problems arise.

Web site development and hosting are potential niches that U.S. firms can fill. The increasing number of German firms desiring an Internet presence will need assistance designing and maintaining their web sites. To succeed in this market, U.S. firms must be able to localize sites in terms of language and culture and be careful to design sites that do not run afoul of German and European data privacy laws.

Many German firms host their web sites in the United States due to lower costs, and more U.S.-based web hosting opportunities will exist as German web adoption rises. European sources estimate that building and maintaining a web site is nearly US$2 million. Due to these high costs, most German web hosting companies are large telecommunications providers. However, hosting costs are coming down to acceptable levels, and industry sources expect more hosting to take place within Germany. U.S.-based web hosting companies also will need to assure German customers of their ability to maintain a German site adequately when based across the Atlantic from the customer.

Caveats

Like the European Commission, the German government regulates Internet use to a far greater degree than the U.S. government. There are various pieces of legislation that may be used to

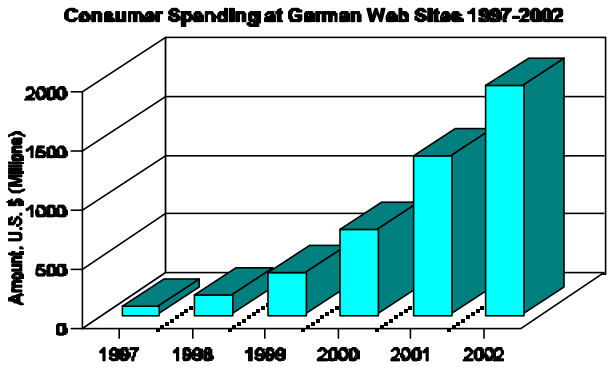
attempt to regulate the Internet, such as Germany's comprehensive Internet privacy law which prohibits certain material and requires confidentiality of personal data. The law holds content providers liable, although access providers may be liable if they are "aware of the content" and fail to use "reasonable and technically possible" means to block it.

ELECTRONIC COMMERCE

In Germany, business-to-consumer e-commerce it not very widespread. Business-to-business e-commerce is slightly more common. Both e-commerce segments are growing, however, and the German government is eager to see e-commerce take off to energize the economy and provide jobs in the face of high unemployment.

Business-to-consumer e-commerce: moving slowly

Business-to-consumer e-commerce use in Germany currently is quite low. Germans have not yet warmed to Internet shopping as have Americans. A British research team estimated that only one percent of German households made on-line purchases in 1997, valued at US$96 million, but expected that figure to rise to 7 percent of German households, and US$3.5 billion, in 2001. Even business-to-consumer e-commerce markets quite common. in the United States, such as for compact discs (CD) and book purchases, are still fledgling. Nonetheless, sources report that electronic bookstores are gaining in popularity. Amazon.de is popular in Germany, and Bertelsmann AG recently formed a joint venture with Barnes and Noble. Computer software and hardware purchases are growing. Travel agencies and on-line banking are two markets predicted to grow the fastest among German business-to-consumer e-commerce markets.



Source: Morgan Stanley Dean Witter

Producer side: the market is still very small...

There are various reasons for limited business-to-consumer e-commerce in Germany. On the producer side, it is difficult to reach the economies of scale necessary to maintain a profitable e-commerce business in Europe due to the fragmented nature of the European market. European e-commerce web sites must be localized in terms of languages and currencies as well as "look and feel", and offer country-specific products and information, including customer support. This has hindered business-to-consumer e-commerce throughout the region, and there exist mostly small on-line markets in each country. Germany is the one market in Europe with a relatively large population, so it may be the preferred country in Europe for e-commerce vendors to establish themselves and offer business-to-consumer e-commerce on a relatively large scale. Nonetheless, because the German population of 80 million is one third that of the United States, economies of scale will remain an issue, particularly as PC and Internet penetration rates remain low. A critical mass of Internet users, not yet attained, will be necessary to support widespread business-to-consumer e-commerce in Germany.

... and unresolved legal issues hinder enthusiasm.

Many legal issues surrounding e-commerce remain unanswered in Germany, as well as in Europe as a whole, impeding the entry of e-commerce vendors into the market. The European Commission's pending directive on e-commerce, summarized in Chapter 1, has created a feeling of uncertainty among e-commerce vendors about future regulations or restrictions on e-commerce that could affect their business or increase their liability. In particular, concerns about which consumer liability laws might apply to e-commerce sales, or if and how e-commerce might be taxed, has kept potential vendors from entering the market. An industry observer in Germany believes that some current e-commerce vendors may even withdraw from the German market if a restrictive e-commerce directive is adopted by the European Community.

Another legal issue hampering firms from entering Germany's business-to-consumer e-commerce market is strict regulations governing the use of personal data. Germany has its own rules on the use personal data, and differences exist between federal and state regulations. The European Community's Data Protection Directive, also detailed in Chapter 1, differs from German regulations.

Consumer side: limited credit card use makes e-commerce shopping difficult...

On the consumer side, the greatest hindrance to the adoption of e-commerce is the lack of an efficient, German-oriented type of payment system for use in on-line transactions. Unlike the United States, there is very little credit card use in Germany. Compared to the 700 million credit cards currently issued in the United States, approximately 12 to 14 million credit cards have been issued in Germany. Only approximately 5 to 6 percent of the German population uses credit cards. In 1998, only 5 percent of all retail sales in Germany were paid for by credit card.

The German attitude toward credit cards differs from that in the United States. Germans do not like using credit cards, and do not like giving out personal data, fearing its misuse. In addition, Germany's strict data protection laws do not allow the easy transfer of personal data between entities, which affects the transfer of credit card data electronically. Credit reporting firms such as Equifax or TRW are illegal in Germany.

In contrast, the most common non-cash payment method in Germany is the EC card, which has a magnetic strip and draws money from the user's bank account, similar to a debit or ATM card. Smart cards, with embedded chips that allow the user to add money to the card, also are popular, particularly because they are more secure than EC cards in terms of personal data.

Some companies have devised strategies to implement e-commerce while working around the credit card issue. Currently, the use of invoices when shopping over the Internet is quite common in Germany. Amazon.com allows bank debits for its German site, amazon.de. In addition, there has been increased investment in, and there remains a need for, software applications for e-commerce based on EC cards. In 1998 some vendors introduced PC adaptors that allow consumers to use EC or smart cards from their homes. However, such adaptors are not yet commonly used.

...security concerns loom large...

Security concerns, prevalent among German consumers, also impede e-commerce use. Many consumers are uncomfortable with the security of on-line transactions and the reliability of electronic payments. U.S. export restrictions on

encryption software larger than 56 bits had been cited in July 1999 as a barrier to increased e-commerce use. Although such software is available elsewhere, many German consumers prefer U.S. encryption products. Recently liberalized U.S. export controls on such security software may enable more consumer confidence in Internet shopping. In addition, as in the case of the German government's increased acceptance of on-line transactions, the use of digital signatures is expected to help alleviate consumers' concerns.

...and high local telephone charges and Internet subscription fees remain.

Because local telephone tariffs make Internet use expensive, Germans are not inclined to surf the web and spend time browsing e-commerce web sites. These telephone tariffs are on top of Internet subscription fees which average DM9.99 (US$5.40) per month.

Some U.S. firms have tried to set up e-commerce businesses or implement e-commerce solutions in Germany, but have encountered great difficulties due to the factors listed above.

Is there a market for business-to-consumer e-commerce solutions providers?

Yes, but with caveats. In addition to the issues described above, Germany has some successful e-commerce technology providers, such as Intershop, who offer competition. Nonetheless, there are many opportunities for U.S. e-commerce solutions providers.

U.S. firms must take into account certain essential market requirements, as previously stated. E-commerce applications must be modified to account for German payment methods; applications must also support currency conversions, particularly the Euro. E-commerce web sites must be localized, offer products or services that meet German market requirements, and have German customer support. In addition, software that interacts with consumers must be localized in German, and German support staff usually are necessary to update and troubleshoot e-commerce web sites.

The German media is raising awareness of e-commerce and industry observers think this may help propel its acceptance and use. Despite the obstacles discussed above, business-to-consumer e-commerce in Germany is promising. While opportunities exist for business-to-consumer e-commerce in Germany, nonetheless, because of lingering consumer skepticism, business-to-business e-commerce will likely show the greatest growth.

On-line banking: an anomaly

Paradoxically, on-line banking is extremely widespread in Germany. In fact, Germany is much further ahead in the use of this technology than the United States; sources estimate that 6 million Germans use on-line banking. This would seem inconsistent with German consumers' concerns about security in electronic transactions. In fact, Germany's initial on-line banking system is based on a decade-old, proprietary, non-Internet-based system (Datex-J, or known as BTX) called GIRO, run by DT. Under GIRO, many banks' electronic infrastructures were standardized and linked to each other and to homes. Banks now offer on-line banking on the basis of these existing IT systems, which remain secure, as well as through T-Online and AOL. Thus, Germans are accustomed to conducting home banking and continue to do so.

The use of on-line banking is expected to increase dramatically in Germany. Currently, a Home Banking Common Interface (HBCI) standard is being developed to integrate the use of EC and smart cards and facilitate more on-line

banking in Germany. Some banks are selling PCs to consumers to encourage more on-line banking.

Internet trading is a small but growing market. In mid-1999, there were approximately 10-15 direct brokerage banks in Germany. For the most part, the younger members of the German middle class conduct most on-line trading; it has yet to appeal to the average consumer, who remains apprehensive. One German bank estimates that slightly more than 200,000 Germans had on-line brokerage accounts in July 1999. Sources report that German banks are actively seeking new technologies to perform electronic brokerage, such as networks, servers, and software.

Finally, German banks are seeking new channels to distribute the various services they provide, as well as to integrate their electronic services, including on-line banking and trading. German bank representatives report that most banks want to develop such a platform strategy and need front- and back-office applications and security products. However, many such products are extremely expensive, and banks are looking for ways to lower their costs. Again, this may be a niche U.S. SMEs firms can fill. Market observers suggest that to sell to German banks, SMEs should work with banks' systems integrators, on which the banks rely to learn about new technologies. German banks tend to work more with smaller technical consultants, due to the growing reputation in Germany of management consulting firms for writing reports and not following through with implementation. More general financial software will have difficulty competing with offerings by SAP.

Business-to-business e-commerce: used more widely

Although business-to-business e-commerce is more widely used in Germany than business-to-consumer e-commerce, its adoption is 18 months to two years behind that of the United States. This figure is up from three years behind U.S. adoption rates merely two years ago. Many large German companies' web sites are static and do not provide interactivity with customers, suppliers, or allow for electronic commerce. Business-to-business e-commerce use is growing as German firms realize it can increase their competitiveness, as younger, more IT-savvy Germans move into management positions, and as larger German firms become increasingly globalized and need to use e-commerce to interact with their disparate offices, partners, and suppliers. A recent survey by Forrester Research found that 65 percent of the top 1000 German firms plan to expand into business-to-business e-commerce.

Sources report that typical German business-to-business e-commerce users are large companies with widely dispersed global distribution chains. Most implementation thus far is for customer service and electronic procurement; the latter is slowly becoming more widespread. More and more large German firms are eager to adopt e-commerce strategies and are using systems integrators and consultants to do so. This may provide opportunities for U.S. SMEs if they can establish a regional presence.

Few SMEs interact with larger firms electronically. In fact, extranet use by SMEs currently is very limited. Some German government sources observe that the supply chain concept, integral to business-to-business e-commerce, is lacking in Germany. Many German SMEs, with the exception of firms in the auto industry, do not view themselves as part of a

supply chain, as do U.S. firms that are well networked to suppliers and purchasers. This view has helped hinder e-commerce use by German SMEs. Nonetheless, large firms are expected eventually to force smaller German firms to become more networked. U.S. firms may be able to take advantage of the opportunity to help these German SMEs integrate themselves into the supply chain and become networked with larger firms.

CHAPTER 4: THE UNITED KINGDOM

UNITED KINGDOM 1998		
Basic Indicators	Total Population (Millions)	58.14
	Total GDP ($ Billions)	1,110.7
Main Telephone Lines	Total (Millions)	30,677.8
	Per 100 Inhabitants	52.76
Cellular Mobile Subscribers	Per 100 Inhabitants	12.23
Telecommunications Revenue	Per main line $	931
Telecommunications Investment	Per main line $	186
Internet	Total Users	8,100,000
	Hosts per 10,000 Inhabitants	429.97

Source: International Telecommunications Union

The UK: An attractive and competitive market …

The UK information technology market is Western Europe's second largest, behind Germany, with an estimated value approaching US$50 billion. It is anticipated that the UK IT market will grow at more than 10 percent annually through 2002. Although the high-technology sector in the UK is small – around 4 percent of all businesses are IT producers, the UK ranks high among the leading economies in per capita IT expenditures (approximately US$700). A recent EU bench marking study on information technology found that the UK had the most advanced IT infrastructure among the seven leading industrial economies, except for the United States. Home to one of the world's most competitive telecommunications markets, UK businesses, particularly the large vertical industries, are among the world's leaders in adopting network and communications technologies. UK businesses lead Western Europe in the use of intranets and extranets. The UK has one of the highest rates of technology integration in Western Europe.

The steady increases in corporate IT spending reflects, in part, the strong performance of the UK economy over the past several years. Other factors include a uniform population density and a high proportion of multisite and multinational businesses that encourage the use of IT products. The UK is a major export market for U.S. IT products and services, and they are highly regarded by British firms. Consequently, UK companies are under constant pressure to maintain their IT spending to remain competitive with their U.S. counterparts.

Telecommunications deregulation is perhaps the biggest contributor to the integration of IT into business processes by British industry and the proliferation of new IT services. For example, since the first phase of liberalization began in 1985, the daytime cost of a phone call to the United States fell 89 percent in real terms.

The penetration of personal computers in UK businesses is high (94 percent), but PC prices remain high compared to the United States and the rest of Europe. The computer hardware market is expected to grow by 5.1 percent through 1999. Reflecting the UK lead in the use of intranets and extranets, increased sales were in the server segment, followed by personal computers. Computer sales increased in late 1998 and early 1999 due to Y2K remediation and planning. Given the recent trends in Internet business models, it is possible that bundling of Internet access with heavily subsidized computers could precipitate an increase in the volume of computer sales. Moreover, the introduction of free Internet access by Internet Service Providers (ISPs) should drive the demand for PCs upward.

The UK software market, valued at US$8 billion, is the fastest growing software market in Europe. Software sales are expected to continue expanding at approximately 15 percent annually for the next two years. The UK software market is particularly well suited for packaged software that runs on client/server networks as well as Internet-related software. The principal drivers behind software development in the UK over the past year were the Y2K problem and implementation of the common currency, the Euro, by other European countries. Significant increases in the use of Internet and electronic commerce will push software development in the near term, particularly for financial applications, enterprise solutions, entertainment (games) and multimedia. U.S. software producers interested in the UK market should be mindful to localize their products. Despite the common language, cultural differences are great and the receptivity of U.S. products may depend on how well the software reflects local tastes.

But still trails the United States in adopting new technologies...

Like most of Europe, the UK trails the United States by at least twelve to eighteen months in the adoption and use of Internet technologies, but the number of UK businesses with Internet access is growing. From 1998 and 1999, Internet access by UK companies increased from 49 percent to 62 percent, and the percentage of companies incorporating web sites into their business functions increased from 37 percent to 51 percent. However, despite high Internet access and the use of intranets and extranets by UK companies, electronic commerce for business-to-business applications has been slow to develop. Internet access among UK consumers is low compared to the United States, 15 percent versus 37 percent of the population, due to metered local telephone calls. It is estimated that more than 10 million people in the UK will have Internet access by the end of 1999 and further increases are expected as the subscription-free phenomenon continues.

And small businesses fall further behind…

British SMEs are considered behind in the use of external networking technologies, and it is estimated that a vast majority of small businesses in the UK do not have Internet access. Increasingly, the UK government recognizes the enormous potential of SMEs, particularly in the IT sector, and recently announced a series of initiatives to make this sector more competitive. While the U.S. IT sector is characterized by an abundance of innovative, risk-taking start-ups that quickly bring their products to market, IT entrepreneurs in the UK are hindered by a conservative banking industry and government laws that frown upon bankruptcy. That mind set is changing among UK government officials and the banking industry, as new policies are being implemented to encourage innovation. British SMEs in the technology industry experience a

difficult time in obtaining critical investment capital.

While the venture capital market in the UK is highly developed, little UK venture capital goes to technology-based start-ups. It is estimated that only 8 percent of the US$20 billion in venture capital funds raised last year went to start-ups; much of the rest went to acquisitions by larger firms. Frequently, the only financing avenues available to British SMEs are venture capitalists known as "white knights," or persons that are familiar with technology. Interestingly, four of Silicon Valley's biggest tech companies (Cisco Systems, Exodus Communications, Oracle and Sun Microsystems) recently established a US$7.5 million joint venture to assist British Internet start-ups.

But, new markets emerge…

As in Germany and the United States, British IT firms tend to cluster geographically, usually around a research institution. For instance, the software sector is particularly vibrant in Cambridge, while the multimedia industry is clustered in Oxfordshire, home of Oxford University. In addition, Stirling University, located in Glasgow, Scotland, attracts a large concentration of software firms and the region has many incubators for small IT firms. The UK government is attempting to leverage the work of high-tech SMEs by the commercialization of university research through cooperative endeavors with businesses. By linking nine regional economic development agencies throughout England with small, high tech associations, the UK government hopes to capitalize on the innovative and entrepreneurial skills of academia and SMEs.

The use of information technologies by the UK government will be an area of future market growth for IT producers. The current administration stated that by March 2001, 90 percent of routine government purchases will be conducted electronically. Educational institutions in the UK are heavy users of IT as the result of government initiatives to increase use of technology in secondary schools throughout the UK. Currently, more than 75 percent of secondary schools have Internet access.

And new opportunities arise for U.S. companies.

The types and varieties of telecommunications technologies available in the UK are similar to the United States However, some technologies in the UK market are particularly notable because of their growth potential, particularly for U.S. SMEs. Broadband Internet access, through either cable modem or Asymmetrical Digital Subscriber Line (ADSL), is expected to increase dramatically as both America OnLine and British Telecom (BT) recently have announced their intentions to introduce these technologies. Given the widespread penetration of wireless communication devices, e.g., cellular telephones, personal digital assistants, and smart phones, in the UK market, it is expected that they will gravitate toward the Internet, particularly as the Wireless Application Protocol (WAP) is fully implemented. According to estimates by the International Data Corporation (IDC), the world will have more WAP-enabled mobile devices than on-line PCs by 2005. Among the services that will initially be offered through WAP applications are e-mail, bill payment and information access. Higher value-added services such as financial information that is delivered to mobile phones are a few years off, but the emergence of this technology infers an excellent future for wireless Internet applications in the near term. In addition, the introduction of third-generation mobile telephony (3G) after 2002 will provide new opportunities for voice, data and video

content. The UK government recently released details regarding the 3G license auction.

The use of smart cards is pervasive throughout the UK and the rest of Europe, but one of the inherent problems with them is that they are not economical for small payments. Consequently, micro payment technologies, which make small payment amounts practical, likely will experience exceptional growth, especially as Internet penetration increases.

Voice over Internet Protocol (VoIP), or IP telephony, has excellent growth potential in the UK, particularly among businesses because of their extensive use of networks and increased cost savings potential. British Telecom is very aggressive in expanding its VoIP network and it recently announced expansion into the Spanish market.

TELECOMMUNICATIONS

The UK was an early leader in the deregulation and liberalization of its telecommunications market, having begun in 1983. The total UK market for telecommunications equipment and services is estimated to be worth US$34 billion. Telecommunications services are estimated to exceed US$28 billion, and sustained growth in this sector is expected for the foreseeable future, especially as mobile communications further penetrates the market and Internet access increases. Business line growth is driven primarily by ISDN services and it is expected to continue, even though ISDN is comparatively expensive to install and lease. Excellent opportunities exist for U.S. companies in all areas of the sector, but especially for companies with expertise and products targeted at network management and call centers.

Telecommunication prices are under considerable pressure because of competition and technological change. A significant increase in data traffic due to the Internet is pushing operators to invest large amounts of money in networks based on packet-switching technologies because the technology is more cost efficient and carries more capacity than traditional circuit-switched systems. For example, the cost of sending 650 megabytes of data from New York to London using an Internet Protocol (IP) based network is estimated to cost about US$2, compared to nearly US$27 using the public switched telephone network (PSTN). Accordingly, new competitors are entering the market at a significant advantage over incumbents because they do not have as much invested in old networks. This is particularly true for companies with wireless technologies who are able to avoid BT's monopoly of the last mile.

A stable and transparent competitive environment helped the UK telecommunications market grow considerably. Oftel, the British telecommunications regulator, put into place a fair and balanced regulatory regime, and was among the first in Europe to introduce open licensing, low interconnect rates, and international facilities liberalization. Moreover, in 1996, Oftel adopted a competitive authority style of regulation that aims to prevent and control anti-competitive practices. Consequently, competition and foreign investment continues to flow into the UK telecommunications market. Deregulating the local loop or the "last mile" will further increase competition in the UK market and provide opportunities for U.S. companies, especially
those that offer local loop wireless telephony services and Internet access.

U.K. Telecommunications Services ($B)			
	1997	1998	1999
Total Market Size	23.3	25.4	27.6
Sales by Local Firms	22.6	24.6	26.7
Sales by Foreign-Owned Firms	0.7	0.8	0.9
Sales by U.S.-Owned Firms	0.6	0.7	0.8

Source: U.S.&Foreign Commercial Service, London

The power of the incumbent persists…

The UK residential telephone penetration rate is very high – 96 percent of all UK households have at least one telephone – and the installed line base is expected to grow steadily as the housing stock continues to increase and household demand for additional phone lines continues. Despite deregulation and increased competition, British Telecom (BT) is the dominant player in the UK market with about 76 percent of the business market and 64 percent of the residential market, according to figures from Oftel. Additionally, BT has a strong presence in the mobile communications market through its investment in BT Cellnet, one of four mobile license holders. However, competition in the residential market is increasing as BT reduced its tariffs in September 1999 by as much as 50 percent. With respect to Internet services, BT is on equal footing with the competition. In fact, it rates fifth in the number of Internet subscribers in the UK ISP market. However, given its tremendous name recognition, reach, and resources, BT will likely emerge as a central player in offering electronic commerce solutions, especially to SMEs.

But, new competition emerges…

Alternatives to fixed-wire communications abound in the UK, as operators in both the cable and mobile communications sectors are investing heavily in the UK market. The cable industry is particularly well suited to challenge BT's dominance in the residential telephony market, as NTL and Telewest, BT's principal competitors, bundle telephony with cable TV service. Microsoft is heavily invested in Telewest and holds a 5 percent share of NTL, leading to speculation that NTL and Telewest will merge, especially now that NTL is scheduled to roll out Internet access and interactive television capability.

U.K. Telecommunications Equipment ($B)			
	1997	1998	1999
Total Market Size	5.4	5.8	6.3
Total Local Production	2.8	3.0	3.3
Sales by U.S.-Owned Firms	0.9	1.2	1.5

Source: U.S.&Foreign Commercial Service, London

The number of mobile communication users in the UK continues to increase. It is estimated that there are nearly 15 million mobile subscribers in the UK, all of whom subscribe to one of four mobile telecommunications operators (Cellnet, Vodafone, One-2-One and Orange). Some expect the number of mobile communications users to double within five years due to competitive price pressures, new wireless applications, and demand. Due to a lack of spectrum allocation, additional mobile licenses will not be granted until third-generation services are auctioned in early 2000. However, opportunities exist for companies with products that are network-based as the completion of digital networks will likely be a priority for each of the current mobile communications operators.

Penetration of digital television (DTV) is much greater in Europe than in the United States, and

significant opportunities exist for companies that provide content or services for the DTV market. The UK is the only market in Europe that offers digital services over all three platforms, satellite, cable and terrestrial broadcasting. It is anticipated that the UK will remain the largest DTV market in Europe for the near term. Significant potential lies in providing on-line information, entertainment, and electronic commerce services via DTV, especially for services like high-speed Internet access, home shopping, on-line games and information, and VoIP.

UK call centers…

Another result of deregulation, which produced significant improvements in both the quality and types of services, and steep reductions in price of phone calls in the UK, was the explosion of call centers. The UK call center market is growing at rates between 30 and 40 percent a year. There are currently more than 4,200 centers in the UK, more than Germany and France combined. Excellent opportunities exist for U.S. companies with products that automatically distribute calls, provide interactive voice response units, and network products and services that integrate computer and telecommunications systems. Scotland has a high concentration of call centers due to highly trained and educated personnel with multilingual capabilities, as well as low labor costs and reasonably priced office space.

THE INTERNET AND ELECTRONIC COMMERCE

Commoditizing the Internet...

The most significant development in the dial-up market, i.e., consumer Internet, is the introduction of subscription-free Internet access. Unlike the United States, Internet access in the UK and most of continental Europe can be expensive due to tariffs placed on local phone calls, not to mention the monthly subscription fee. When Dixon's Freeserve, a UK ISP, introduced subscription-free Internet access in the UK marketplace in early 1999, it lured customers away from established portals like AOL. ISPs offering subscription-free Internet services generate revenue by receiving a percentage of the revenue charged to the user for the phone call by the telephone operator, in addition to advertising and on-line help surcharges. Whether or not these business models remain viable is yet to be determined. AOL recently introduced flat-rate pricing, and the move appears to be making a difference, as British Telecom reportedly is considering similar rates. Moreover, the move seems to be making its way across the channel to the Continent; France Telecom announced that it would offer flat-rate Internet access service on November 1.

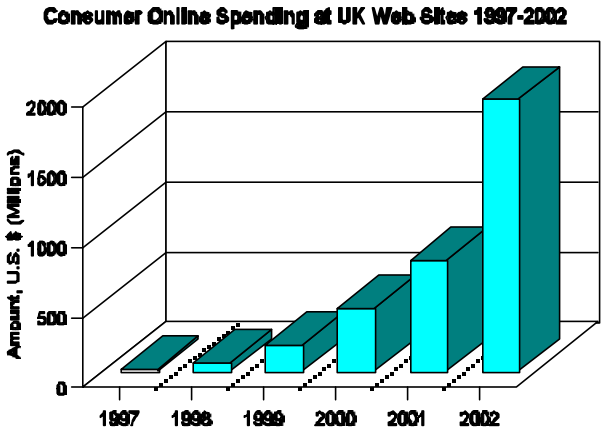
Another key difference between the Internet business environment in the UK and the United States is that startups are not part of the business model in the UK. Most Internet developments in the UK, and the rest of Europe, are the result of endeavors by major European corporations, or U.S. companies that import their Internet business models. To a lesser extent, the incumbent and new telecommunications operators and ISPs are affecting Europe's Internet landscape. Telecommunications companies are increasing their share of the SME and multinational business markets. Long-term use of Internet access in the UK will likely be driven by the introduction of new technologies such as digital TV, cable modem technologies, and xDSL. Faster Internet connections will reduce the amount consumers must pay to remain on line.

The British ISP market is considered very competitive, and with the introduction of subscription-free Internet access and flat-rate

calling, competition will intensify. For example, 4thenet.co.uk, a local ISP, began paying customers for each minute they remain on line. Whether these new business models remain viable will be determined by competition. There are approximately 300 ISPs in the UK, of which about 30 offer subscription-free Internet access. The UK ISP market is consolidating around telecommunications operators, media and entertainment companies, financial institutions and retail firms.

UK business-to-consumer segment: Off to a slow start, but gaining speed...

As the subscription-free Internet access business model becomes more pervasive and ISPs develop innovative schemes to overcome metered local phone calls, the business-to-consumer segment of electronic commerce in the UK is beginning to expand. Moreover, as new technologies such as DSL and digital TV become more affordable, more users will likely use the Internet for on-line purchases. On-line purchasing trends are similar to those found in the United States two years ago. Consumers are purchasing compact disks, books, travel, software and electronic equipment over the Internet. According to one estimate, one in five Internet users in the UK made an on-line purchase in the last six months, and it is estimated that annual consumer spending in the UK will amount to approximately $US4.5 billion by the end of 1999. Most of the purchases were from home. Unlike Germany, where credit card use is not prevalent, more British consumers are using their credit cards to make on-line purchases; the number of credit cards used for on-line purchases doubled over 1998 figures. Presumably, the recently enacted UK data protection law, which is designed to comport with the EU Data Protection Directive, instilled a new level confidence in UK consumers. However, it is more likely that security is less of a concern now that technology is available for secured transactions.



Source: Morgan Stanley Dean Witter

British retailers make up a small portion of the electronic commerce market, however, as their U.S. counterparts are clearly ahead. Although the number of Internet users is increasing in the UK, retail merchants that are migrating to the Internet are focusing on commoditizing data and listings, instead of developing strategies to retain customers and drive their audience to sites. Costs may be one factor. The cost of building and maintaining a static corporate web site averages about US$75,000 to build and US$45,000 to maintain. A fully functional transaction-based e-commerce web site in Europe is estimated to average nearly US$2 million. A leading retail e-commerce web site is estimated to cost US$11.3 million. A recent survey of UK businesses found that companies are not allocating many resources for their corporate web sites: the average site among the most popular commercial sites in the UK was around US$750,000 to build and maintain. This implies a good market for U.S. companies with products that support on-line purchases, including web-hosting and IT out sourcing companies, and services to increase customer relationship management.

Localise, localise, localise....

For U.S. companies interested in selling directly into the UK market, it is important to keep in mind the need to localize both the content and style of the web site to meet local language and cultural tastes. Web pages should be optimized for national search engines in the UK such as excite.co.uk and UKplus. Another factor that will affect the success of a U.S. company's web site that focuses on the UK is the new European single currency, the Euro. Despite being a member of the European Union, the UK did not sign onto the implementation of the Euro. However, many observers predict that eventually the UK will adopt it. To be prepared, U.S. companies should include monetary translations into their electronic commerce applications. This is particularly true for currencies in the Internet era, since consumers throughout Europe will be able to compare prices.

Business-to-business opportunities...

As indicated earlier, British industry has a high rate of IT usage, particularly in the networking area. However, it has been slow to develop business-to-business (B2B) relationships, choosing instead to use company-owned extranets and virtual private networks (VPNs). Large vertical industries, such as finance and telecommunications, have integrated web-based applications into their core business functions due to competitive reasons, principally to keep up with their U.S. rivals. Although they realize the economies of scale and cost savings can be realized by integrating B2B solutions into their supply chain management, few UK firms have done so. Most B2B transactions that occur in the UK take place in closed networks, i.e., those designed for traditional electronic data interchange (EDI). According to industry sources in the UK, Internet-based EDI transactions are expected to increase significantly over the near term.

British business regards B2B e-commerce with a sense of urgency, but a variety of reasons have hindered its implementation. A leading factor is the lack of upper management support for integrating electronic commerce solutions as a core part of business operations. Moreover, industry sources in the UK reveal that many British companies view electronic commerce as more of a burden because of the costs associated with starting an e-commerce web site than a competitive advantage Other contributing factors include the lack of a single technical vocabulary, particularly for supply chain management, and a shortage of skilled labor. The introduction and widespread use of Extensible Markup Language (XML) will mitigate the lack of standardized nomenclature.

British companies interviewed for this study expressed interest in active participation, and indeed promotion, of electronic commerce by the UK government. Moreover, they expressed a willingness to work with the government to overcome one of the biggest impediments to the adoption and implementation of electronic commerce in the UK - the absence of a legal framework.

UK Government initiatives...

The British government recognizes the potential of the Internet and electronic commerce, and the need to remain competitive in an increasingly digitized global economy. Through a series of ambitious initiatives, the government is determined to make the UK one of the world's best places to conduct electronic trade. Included in this ambitious agenda is the goal of ensuring that 25 percent of all interactions between British citizens and businesses with the government are conducted on line by 2002.

Earlier this year, the British government released a consultation document on building confidence in electronic commerce that covered a variety of issues ranging from electronic signatures to privacy, taxation and universal service. In July 1999, the Department of Trade and Industry released its Electronic Communications Bill. The main purpose of the bill aims to help build confidence in electronic commerce and the underlying technology by providing for the following: a statutory approval scheme for businesses and other organizations providing cryptography services, such as electronic signature services and confidentiality services; the legal recognition of electronic signatures; and the removal of obstacles in other legislation to the use of electronic communication and storage in place of paper. The bill also contains provisions to maintain the effectiveness of existing law enforcement powers in the face of increasing criminal use of encryption, and to update procedures for modifying telecommunications licenses.

The bill was met with some reservations by industry, primarily over the electronic commerce licensing scheme and law enforcement demands for public keys to unscramble encrypted messages. Industry sources welcomed the inclusion of electronic signatures in the statue, but were concerned about how it affected UK Internet businesses.

CHAPTER 5: MARKET ENTRY STRATEGIES

Because of the relatively large sizes and rapid growth of their IT markets, the United Kingdom and Germany offer U.S. IT SMEs excellent opportunities. In addition, both countries are good bases from which U.S. firms can effectively target other markets in the region. Some European IT industry observers advocate entering the greater European market via the United Kingdom because of the common language and closer cultural ties. Others advocate starting in Germany because it is more closely integrated with the rest of Europe. Whether a U.S. firm plans to sell in one or multiple European markets, the choice of where to begin or expand will depend on the market for its technologies. Careful research, planning, and strategizing will pay dividends.

STRATEGIC ALLIANCES/ PARTNERSHIPS

For small U.S. companies to compete effectively in highly competitive IT markets such as Germany and the United Kingdom, they may want to consider collaborating with other firms that have complementary products or services. Many IT experts interviewed in Europe recommended strategic alliances or partnerships as an effective way for U.S. IT SMEs to penetrate European markets. In addition, many European IT firms are eager to serve the U.S. IT market, and view partnerships with U.S. firms as a two-way street toward achieving that goal. Alliances can be very formal, with well- established responsibilities, or less formal, depending on each company's culture and goals.

There are various benefits to partnering for U.S. firms. Partnering with a European firm offers easier access to knowledge of the market. European partners are experienced with market-specific regulatory issues, tax laws-- including the complicated value-added tax (VAT)-- and the like. Partnering also can help SMEs overcome the lack of brand recognition, which is one of the biggest challenges that many SMEs face, and thus gain credibility in foreign markets.

Partnering can be beneficial financially. Equity investments in a strategic alliance may provide either party with much-needed cash or management infusion. Non-equity investments, such as licensing, marketing, and research collaboration, are other benefits to both firms. Research collaboration can be especially useful for U.S. companies unfamiliar with the target market's business and cultural differences that should be considered in new product development. In addition, given the short life cycles of IT products and services, research and development costs can be distributed among two or more companies. Companies can pool resources and skills to create innovative products and services to match potential customers' needs, and win business that may have escaped them had they worked on an individual basis.

Partnering also may allow a U.S. SME, through its European partner, access to European or country-specific funding. The U.S. Department of Commerce currently is working on a program to assist U.S. IT firms to capitalize on opportunities in infrastructure projects funded by the European Union via consortia with European and other U.S. firms.

Partnering with like-minded SMEs

European IT SMEs throughout the United Kingdom and Germany are eager to partner

with U.S. firms to complement their own products with U.S. firms' leading-edge technologies. Many European IT SMEs are new and seek the legitimacy that can come from having a U.S. partner.

Partnering with large firms or systems integrators

Small companies in the international marketplace often lack the brand recognition and delivery channels enjoyed by larger companies. Working with more established IT firms, such as systems integrators (SIs) or larger firms that integrate the U.S. SME's technologies into their product or service suites, allows the SME to reach customers that might not otherwise purchase its technologies, which helps build name recognition. According to European industry representatives, many European SIs search for new products, and are especially interested in U.S. firms' technologies.

Steps to consider

Small high-tech companies eager to enter the German and UK markets should consider the value of strategic alliances/partnerships. However, companies should keep in mind the following steps in forming a strategic alliance:

- Identify a key individual in both companies, preferably a principle owner or senior manager, who can focus on the alliance;
- Conduct due diligence. Check the background of the people with whom your company will partner, including the quality of their products and technology, structure of their business, etc. The German and UK governments, as well as the Department of Commerce's U.S. and Foreign Commercial Service, have offices where prospective partners can find such information;
- Set clear objectives. Since companies will have different objectives in forming an alliance, both parties should agree on a common set of strategic objectives to gain from the alliance at the beginning. Building a business relationship should complement financial objectives, rather than dominating the overall strategic objectives of either partner; and
- Use legal and contractual mechanisms to protect your intellectual property rights.

Finding an appropriate partner

Firms must do their homework to find the best partners in foreign markets. A variety of organizations exist that are eager to help U.S. IT SMEs partner with foreign counterparts in Europe. In the United Kingdom and Germany, Regional Economic Development Agencies, local trade associations, and U.S. Department of Commerce trade specialists can provide needed assistance. Trade fairs are another avenue to seek partners, although this is a less targeted approach.

Regional Economic Development Agencies (REDAs)

The UK and Germany have a number of Regional Economic Development Agencies (REDAs)[12] which aim to encourage profitable business practices of local firms, especially SMEs. Many of these REDAs have offices that focus on the IT industry, or are themselves IT specific, and perform a variety of services for local IT SMEs. They help IT SMEs find financial assistance, such as grants or low-interest loans, from sources including the government, banks, venture capitalists, informal investors, and other private sector

[12]Regional Economic Development Agency (REDA) is a catch-all phrase referring to organizations which assist firms in a given region. They also are commonly called regional development organizations.

sources. In many cases, they also provide firms with business counseling. The REDAs often take steps to assist in forming economic relationships between foreign companies and local firms or attract foreign companies to invest in that region.

REDAs in the UK and Germany are eager to help their local IT SMEs partner with interested U.S. firms, and they have various matchmaking capabilities. They are eager to alert their local companies about potential U.S. partners and help set up meetings between firms. REDAs that expressed an interest in facilitating matchmaking between their local IT companies and U.S. SMEs include:

- East of England Investment Agency (EEIA), Cambridge, United Kingdom
- Scottish Trade International, Glasgow, Scotland, United Kingdom
- The Baden-Wurttemberg Agency for International Economic Cooperation-GWZ, Stuttgart, Germany

For a more complete list of relevant UK and German REDAs and contacts, see the appendix.

Trade Associations

Many UK and German IT-related trade associations also are eager to help facilitate matchmaking between their members and U.S. SMEs. Some of these are:

- The Computer Software and Services Association (CSSA), London, United Kingdom
- The Scottish Software Federation, Glasgow, Scotland, United Kingdom
- The German Software Industry Association, Munich, Germany

For a more complete list of relevant UK and German trade associations and contacts, see the appendix.

The U.S. Department of Commerce

U.S. Department of Commerce U.S. and Foreign Commercial Service (US&FCS) industry specialists located in target markets perform various matchmaking services for U.S. firms for a fee. US&FCS services are summarized in Chapter 6.

The TransAtlantic Small Business Initiative (TASBI)

The TransAtlantic Small Business Initiative (TASBI) is a collaboration among U.S. and EU governments and private sectors to promote partnerships between U.S. and European SMEs so that they can compete more effectively in global markets. TASBI brings SMEs together through international matchmaking and business partnering events, and facilitates transatlantic strategic partnerships and alliances; technology transfers and licensing agreements; distributorships; franchises; joint ventures; and direct investments. For a list of upcoming TASBI matchmaking events, a list of potential EU and U.S. business partners, and trade and business-related information by EU country, see its web site at www.tasbi.com. TASBI contacts are listed in the appendix.

AGENTS AND DISTRIBUTORS

Using agents and distributors is a routine mechanism for companies wishing to export. For many IT firms, agents and distributors offer a cost-effective entry into new markets. Like all partners, they can assist the U.S. firm with their knowledge of the target market's regulations and taxes.

Agents and distributors differ slightly. Agents generally take orders for or sell a product, but are not directly responsible for payment. An agent might handle one or several similar products and sell them by showing catalogs or samples prepared by the manufacturer. In most countries, an agent will fulfill a similar role in the domestic economy and therefore may sell products that compete with those of the U.S. producer.

A distributor is typically responsible for the payment of a product that is exported. Distribution agreements are useful for products that have brand recognition. Distributors sometimes combine their own product with the producer's, which makes the distributor more committed to selling an exporter's product.

In either case, agents and distributors must be qualified to ensure they understand the product and can provide post-sales service. The Commerce Department's U.S. and Foreign Commercial Service provides an Agent/Distributor Service that will qualify potential candidates.

For SMEs that have highly sophisticated products, agents and distributors may not be the best market entry option. In the IT industry, after-sales service, which sometimes includes working closely with the customer on technology issues, is critical and a function likely best handled by the firm and/or a technology partner.

INCUBATORS

Both Germany and the United Kingdom are home to many "incubators", or places that house and provide various services to start-up IT firms, both domestic and foreign. Most incubators provide new firms with basic office space and services, such as telephone, fax, computer, and Internet access, plus a shared receptionist, at very low cost. Others also provide business counseling. In many cases, start-up firms may remain in an incubator for a set period of time, such as 2 to 3 years. For example, Scotland boasts many incubators, which U.S. firms may use to access the market.

TRADE FAIRS

Trade fairs in Europe, particularly in Germany, are an excellent way for SMEs to introduce their technologies to the European market. In particular, German trade fairs have an international focus, attract heavy attention from worldwide buyers, and are highly successful from a sales standpoint. Two of the most important IT-related trade shows in Europe each year are CeBIT (Hannover, Germany), the world's largest trade show for computers, software, office automation, and telecommunications (6,900 exhibitors and 750,000 qualified visitors attend each year) and SMAU (Milan, Italy), Europe's second largest information and communications technology trade fair (over 2,400 exhibitors and 360,000 qualified visitors attend each year). Smaller, more focused trade fairs also exist that may be less overwhelming for smaller firms. Trade fairs that focus on specific vertical industries are another avenue for some SMEs. For example, the European Banking Technology Fair, held in the fall in Germany, is an excellent arena for SMEs to showcase financial or security technologies to potential customers.

U.S. Department of Commerce personnel participate in many foreign trade fairs with or on behalf of U.S. firms, offering the firms exposure at prices far below regular trade fair participation costs. For a partial list of IT and related trade fairs in Europe supported by the Department of Commerce's U.S. and Foreign

Commercial Service, see the Showcase Europe web site at www.sce.doc.gov. The International Trade Administration's Office of Computers and Business Equipment web site, http://exportIT.ita.doc.gov, also lists IT-related trade promotion events. Some upcoming IT-related European trade events are listed in the appendix.

INTERNET SALES: AN OPTION?

The emergence of the Internet will significantly change distribution channels and customer relationships in Europe, as it is doing in the United States. However, Internet-based sales into Europe can be problematic for U.S. firms.

In general, the EU's privacy laws are more stringent than the U.S. self-regulatory approach. U.S. firms that sell directly over the Internet need to understand the targeted country's data privacy laws. European countries also have their own distribution laws, and U.S. producers who ship their products from the United States must take care not to violate applicable laws. In addition, as detailed below, IT products and services will need to be localized to some degree to succeed in European markets. Even if a U.S. firm can fulfill an order over the Internet, it may need to modify the product or service before sending it to the customer. Any products exported from the United States, including orders fulfilled over the Internet, must meet European technical standards, summarized in Chapter 1.

SMEs, who often cut costs by distributing software electronically, should be aware that the high costs associated with Internet use detailed above means that electronic software distribution (ESD) in Europe currently is not an option for the average software user. However, ESD is expected to become increasingly popular in Europe over the next few years as telephone tariffs fall and bandwidth increases.

ADDITIONAL MARKET ENTRY TIPS: LOCALIZATION IS KEY

Regardless of market entry strategy, the biggest factor to keep in mind for success in Europe is the need to localize products and services for target markets.

Products, marketing materials, and web sites, particularly those that are transaction-based, should be localized. Localization for language is particularly important. Europe has eleven official languages. Although many Europeans speak English, many do not. Even those Europeans who do understand English prefer products, such as software and product manuals, or services, such as web pages, to be in their local language. Localization is even necessary for the UK market because some American and British words are spelled differently, e.g., localize versus localise. In the UK, the American spelling will be viewed as a typographical error.

Most software sold in Europe should be localized into the target market's language, particularly software that interacts with average users. Language localization is not as imperative for software programs that perform more back-office, technical functions. Industry observers also state that users of niche software products are usually eager to obtain new technologies quickly and do not want to wait for translations.

Language localization is particularly important for the Internet and electronic commerce applications. Research indicates that web users are three times more likely to make a purchase over the Internet if a site is in their native language. However, for web sites, particularly those used for electronic commerce, language issues can have many hidden costs. Native-language staff are

necessary to maintain the sites, answer customers' questions, and fulfill orders generated electronically.

For web sites, localization in terms of "look and feel" also is critical, according to European industry analysts. Web applications and content that cater to local customs and culture will be well received.

Software products with financial applications sold in Europe must be compatible with the Euro.[13] Germany adopted the Euro, whereas the United Kingdom has not. Software sold in Germany must be Euro-compatible and able to handle the Deutschmark and Euro simultaneously until 2002, when the Euro will completely replace the Deutschmark. Market experts recommend that software vendors wishing to sell in the United Kingdom build in Euro compatibility because it is expected that the UK will adopt the Euro at some point in the future. The UK financial services industry is Euro-compliant, due to its interaction with other European firms, so any financial services software sold in the United Kingdom must accommodate the Euro.

E-commerce applications developed in the United States will have to be changed for the European market to account for differing payment methods. Credit card penetration in Europe, particularly in Germany, is not nearly as high as it is in the United States. Many European customers prefer to be invoiced after ordering products over the Internet. Specifics on common German and UK payment practices are detailed in chapters 3 and 4, respectively.

Web sites will need to accommodate these different payment systems. European data protection laws that regulate the flow of personally identifiable data, such as credit card information, also affect e-commerce applications. The European Data Protection Directive is summarized in Chapter 1.

OFFER INPUT INTO TRADE POLICY FORMULATION

Countries' trade and regulatory policies affect business opportunities, and the U.S. government works to create effective trade policies that facilitate U.S. firms' international business. Many U.S. firms work closely with U.S. government officials to formulate trade policies vis-a-vis U.S. trading partners, including the EU. U.S. government officials solicit and welcome input from U.S. industry on issues such as trade agreements and trade barriers that impact firms' ability to do business in foreign markets.

The Trans Atlantic Business Dialog (TABD) is an informal process set up by U.S. and EU businesses to help shape U.S.-EU trade policy. The private sectors develop joint U.S.-EU trade policy recommendations, working together with the U.S. government and the European Commission. Joint U.S./EU working groups make recommendations to governments on key priorities for the transatlantic business community. A working group on SMEs provides SME input into each TABD issue and promotes the interests of small businesses,[14] and a working group on e-commerce seeks to develop industry

[13]Of the EU countries, Austria, Belgium, Finland, France, Germany, Ireland, Italy, Luxembourg, the Netherlands, Portugal, and Spain have adopted the Euro.

[14]The TransAtlantic Small Business Initiative (TASBI) arose from this working group to facilitate business partnering between SMEs. TASBI is discussed earlier in this chapter under *Finding an Appropriate Partner*.

consensus on topics including data protection, encryption, bandwidth competition, and electronic contracts. To involve your company in TABD activities, or for more information, see the appendix or www.tabd.com.

Other mechanisms for involvement in trade policy exist through the U.S. Department of Commerce's International Trade Administration (ITA) offices. Information on ITA trade policy activities, such as the Small Business Program, is included in Chapter 6.

Consider a regional presence....
One U.S. SME successful in the German market recommends that U.S. SMEs start with a partner in Europe and gauge how the market, and the relationship, progresses. The firm suggests that U.S. SMEs will need eventually to set up some sort of presence in a region, such as a subsidiary, if they want to remain in the market long term and truly understand and be part of it. The firm also advises having local management within a few years.

CHAPTER 6: THE ROLE OF THE U.S. DEPARTMENT OF COMMERCE

INTERNATIONAL TRADE ADMINISTRATION

The mission of the U.S. Department of Commerce's International Trade Administration (ITA) is to help U.S. businesses succeed globally. Two ITA units heavily involved in export promotion are Trade Development and the U.S. and Foreign Commercial Service.

TRADE DEVELOPMENT (TD)

ITA's Trade Development (TD) unit is the Commerce Department's link to U.S. industry. TD provides industry and market analyses, export promotion services, advocacy for U.S. companies bidding on foreign government contracts, and support for trade negotiations. It also offers an array of services to help small businesses increase their export potential.

Industry Expertise. TD's industry expertise encompasses nearly all U.S. business sectors.[15] Industry sector specialists provide U.S. firms detailed information and analyses on domestic and foreign industry trends; foreign market conditions and opportunities for specific products or services; general exporting advice; information on foreign market tariffs and non-tariff barriers, regulations, and business and cultural practices; and advocacy assistance.

TD's industry expertise is also the primary source used by the President and the U.S. Trade Representative (USTR) in trade negotiations. TD's industry analyses, close work with industry representatives, understanding of issues such as restrictions on market access and product standards and testing, and knowledge of trade data help negotiators understand business priorities and problems and develop trade agreements that provide maximum benefit for U.S. firms. TD industry experts also help monitor and enforce foreign governments' compliance with trade commitments, working with other ITA units, including the U.S. and Foreign Commercial Service and Market Access and Compliance, and USTR.

TD's main information technology (IT) industry-related offices are the Office of Computers and Business Equipment (OCBE), the Office of Telecommunications (OT), and the Office of Microelectronics, Medical Equipment, and Instrumentation (OMMI) .

Office of Computers and Business Equipment (OCBE)

The Office of Computers and Business Equipment focuses on the part of the IT industry that covers computers and peripherals, software, networking equipment, Internet technologies, e-commerce technologies, and photographic equipment.

OCBE actively supports U.S. IT firms' efforts to expand their business overseas. Its industry specialists track the growth and

[15]Except agriculture, which is handled by the U.S. Department of Agriculture.

competitiveness of domestic and foreign IT industries; counsel U.S. businesses on overseas market conditions and the practical aspects of exporting their products; identify market barriers as they affect IT exports; and work closely with USTR to negotiate the removal of these barriers.

OCBE export promotion activities include trade missions, trade fairs, catalog shows, and technical seminars that introduce U.S. businesses to potential partners and IT end-users overseas.

OCBE staff compile and disseminate detailed information and analyses on their IT industry sectors. Each year, industry specialists profile these industries in the Department of Commerce/McGraw Hill publication *U.S. Industry and Trade Outlook*, describing current and future IT industry and market trends on a domestic and global basis. They also continually expand and update the OCBE web site with information on foreign markets and regulations, U.S. and foreign policies that affect IT exports, trade events, and additional government and private-sector resources.

In 2000, OCBE will be involved in a number of activities including work on two Market Development Cooperator Program (MDCP) grants to assist IT SMEs (see discussion of MDCP program below), focused market research on Latin America, a trade mission to Korea and Taiwan, continued monitoring of computer-related trade agreements, and will continue to emphasize a strong overall e-commerce focus in its trade promotion activities.

To obtain more information, including a list of upcoming OCBE-supported trade events, or to locate OCBE trade specialists, contact:

Office of Computers and Business Equipment
U.S. Department of Commerce, Room 2806
14th Street & Constitution Avenue, N.W.
Washington, D.C. 20230
Tel: (202) 482-0572
Fax: (202) 482-0952
http://exportIT.ita.doc.gov

Office of Telecommunications (OT)

The mission of TD's Office of Telecommunications (OT) is to support the growth and competitiveness of the U.S. telecommunications equipment and services industries in foreign markets.

OT provides business counseling to U.S. telecommunications firms seeking to enter specific markets by developing and disseminating information on the telecommunications market conditions in foreign countries based on information from Commercial Service posts abroad (see US&FCS section on the following pages) and a wide range of other industry resources.

OT promotes international trade and investment opportunities for the U.S. telecommunications industry by sponsoring events that offer direct contact with foreign government and industry officials. In addition, in conjunction with other parts of ITA and other U.S. government agencies, OT acts as an intermediary between U.S. firms and foreign government officials to provide advocacy support for U.S. bidders on foreign public projects and to reduce or remove barriers that limit U.S. telecommunications firms' access to foreign markets. The office also works closely with USTR on trade negotiations and other efforts to open foreign markets to U.S. telecommunications equipment and services exports.

OT conducts market research and statistical analysis of the domestic and international telecommunications industry, publishing a variety of trade and industry reports, including telecommunication trade statistics and foreign market guides. The office distributes a series of free electronic newsletters delivering up-to-date information on foreign market opportunities and industry information to U.S. subscribers. OT also prepares the telecommunications chapters of the *U.S. Industry and Trade Outlook.*

To obtain more information, including a list of upcoming OT-supported telecom events, or to locate OT trade specialists, contact:
Office of Telecommunications
U.S. Department of Commerce, Room 4324
14th Street & Constitution Avenue, N.W.
Washington, D.C. 20230
Tel: (202) 482-4466
Fax: (202) 482-5834
http://infoserv2.ita.doc.gov/ot/home.nsf

Office of Microelectronics, Medical Equipment, and Instrumentation (OMMI)

The Office of Microelectronics, Medical Equipment, and Instrumentation (OMMI) covers electronic components (such as electron tubes, printed circuit boards, semiconductors, capacitors, resistors, transformers, and connectors) and semiconductor manufacturing equipment. OMMI also covers several industry sectors with high IT content, including medical and dental equipment and electromedical apparatus, process control instruments, laboratory analytical instruments, optical instruments, and instruments to measure electricity and electrical signals.

OMMI's primary mission is to promote exports and increase the international competitiveness of these U.S. industry sectors. OMMI counsels U.S. firms on foreign market conditions and the specifics of exporting, using information from US&FCS posts abroad and a wide range of other industry resources. OMMI staff also work with private sector and DOC colleagues to develop trade missions, trade fairs, catalog shows, seminars and other trade events that offer direct contact with foreign government officials, industry representatives, and end-users. In cooperation with other parts of ITA and other U.S. government agencies, OMMI participates in and supports trade negotiations to reduce or eliminate regulatory and other barriers to trade and international investment in these industries.

OMMI staff gather and disseminate market research and statistical analyses of the domestic and international microelectronics, medical equipment and instrumentation industries. Trade and industry reports, trade statistics, information on foreign markets and regulations, U.S. and foreign policies that affect exports, trade events, and links to additional government and private sector resources are available on the OMMI website. OMMI industry specialists also profile current and future industry and market trends on a domestic and global basis in the *U.S. Industry and Trade Outlook.*

To obtain more information, including a list of upcoming OMMI-supported trade events, or to locate OMMI trade specialists, contact
Office of Microelectronics, Medical Equipment, and Instrumentation
U.S. Department of Commerce, Room 1015
14th Street & Constitution Avenue, N.W.
Washington, D.C. 20230
Tel: (202) 482-2470
Fax: (202) 482-0975
http://www.ita.doc.gov/td/ommi/

Export Counseling. TD's Trade Information Center (TIC) is an excellent first stop for new-to-export companies seeking export assistance from the federal government. TIC trade specialists: 1) advise exporters on how to find and use government programs; 2) guide businesses through the export process; 3) provide country and regional business counseling on standards and trade regulations, distribution channels, trade opportunities and best prospects for U.S. companies, foreign import tariffs/taxes and customs procedures, and common commercial difficulties; 4) provide information on overseas and domestic trade events and activities; and 5) provide sources of public and private export financing. TIC trade specialists also tell callers how to access reports and statistics from the computerized National Trade Data Bank (NTDB) and direct them to state and local trade organizations that provide additional assistance. To contact the TIC, call 1-800-USA-TRAD(E); fax (202) 482-4473; e-mail tic@ita.doc.gov; or visit its Internet site: http://www.ita.doc.gov/tic.

Trade missions and events. Working together with the private sector and the U.S. and Foreign Commercial Service, TD industry experts help plan, organize, and recruit for trade events, including high-level executive missions with the Secretary and the Under Secretary of Commerce.

Advocacy Center. TD's Advocacy Center helps businesses of all sizes, especially SMEs, compete for projects overseas. The Center aims to ensure that SMEs participating in international procurement tenders are treated fairly and that their proposals are evaluated on technical and commercial merits. Assistance can include a visit to a key foreign official by a high-ranking U.S. government official; direct support by U.S. officials stationed at U.S. embassies and consulates; and coordinated action by U.S. government agencies to provide maximum assistance. SMEs account for 51 percent of the Center's client base. In addition, as suppliers or subcontractors to larger U.S. companies' overseas projects, thousands of U.S. SMEs benefit indirectly from the Advocacy Center's services.

Small Business Program. The Small Business Program is ITA's focal point for trade policy issues concerning SMEs. The Program brings the small business point of view to international trade policy discussions, primarily through the Industry Sector Advisory Committee on Small and Minority Business for Trade Policy Matters (ISAC-14, see ICP discussion below), the only advisory committee to the U.S. government on small and minority business export concerns. The Small Business Program also provides outreach to and plans events for small, women-owned, and minority-owned firms.

Industry Consultations Program. Industry has a voice in U.S. trade policy formulation through the Industry Consultation Program (ICP). The ICP is comprised of 17 Industry Sector Advisory Committees on Trade Policy Matters (ISACs), representing 17 industry sectors of the U.S. economy, including small and minority businesses. It also has three Industry Functional Advisory Committees on Trade Policy Matters (IFACs), that address cross-cutting issues affecting all industry sectors–customs, standards, and intellectual property rights. Advisors on these committees have direct access to trade policymakers at the

Department of Commerce and USTR, and develop their industry's positions on U.S. trade policy and negotiation objectives.

The committees address market access problems; tariff and non-tariff barriers to trade; discriminatory foreign procurement practices; the information, marketing, and advocacy needs of their sector; and other trade issues. Committee members are executives and managers of U.S. manufacturing or service companies involved in international trade or are trade association executives.

Export Trading Companies and Trade Intermediaries. The Office of Export Trading Company Affairs (OETCA) promotes the formation and use of export trade intermediaries and the development of long term joint export ventures by U.S. firms, including those of U.S. firms that are competitors in the domestic market. OETCA administers two programs available to all U.S. exporters or potential exporters. The Export Trade Certificate of Review program provides antitrust protection to U.S. firms for collaborative export activities. The U.S. Exporters' Yellow Pages™ publication is designed to assist U.S. trade intermediaries to link up with U.S. producers of exportable goods and services.

Market Development Cooperator Program. The Market Development Cooperator Program (MDCP) is a competitive matching grant program. It builds public-private partnerships by providing federal assistance to nonprofit export multipliers, such as states, trade associations, and chambers of commerce, which are particularly effective in reaching and assisting SMEs. MDCP awards help fund the start-up costs of new export marketing ventures which these groups would not undertake without federal government support.

More information on Trade Development, including information on these services and industry specialist contact information, can be found at http://www.ita.doc.gov/itahome.html Selected TD contacts are listed in the appendix.

THE U.S. AND FOREIGN COMMERCIAL SERVICE (US&FCS)

Also part of the International Trade Administration, the U.S. and Foreign Commercial Service (US&FCS) aims to assist U.S. firms in realizing their export potential by providing expert counseling and advice, information on markets abroad, assistance in locating international contacts, matchmaking services, support of trade events, and advocacy services. US&FCS trade experts are located in more than 70 countries around the world and in major cities throughout the United States.

International Operations US&FCS offices are located primarily in U.S. embassies and consulates and are valuable connections to overseas markets. US&FCS staff in these countries are industry focused and can offer expert advice on the business practices, cultures, and languages of their specific country or region. They offer numerous products and services to help U.S. firms enter the market or assist companies already established in that country expand their sales. The main activities of these overseas offices are establishing key industry and foreign government contacts, helping match U.S. suppliers with overseas buyers, and

organizing or facilitating trade events. Contact information for US&FCS IT market specialists in Germany and the UK, as well as Belgium, is in the appendix. In addition, the Showcase Europe web site, www.sce.doc.gov, has contact information for all Europe-based US&FCS trade specialists.

Showcase Europe

Showcase Europe (SCE) is a US&FCS program that coordinates the work of the US&FCS offices throughout Europe[16] to help U.S. firms approach the European market on a regional basis. The European-wide services provided through the SCE program include market research, market contacts, trade promotion, and advocacy support. SCE seeks to introduce new-to-market exporters to the European market, to help U.S. firms already exporting to one or more European markets to expand their activities into additional European markets, and to further transatlantic trade and investment in general.

SCE focuses on eight industry sectors, including Information and Communications Technology. Each sector provides the following services:

- Preparing European-wide market research to enable more consistent and comparable analysis across the region;
- Forming European sector-specific business networks, to enable closer contact with companies, associations and other multipliers;
- Promoting U.S. companies participating in SCE events at selected major international trade shows in Europe; helping identify potential agents, distributors and buyers; and providing counseling services;
- Organizing pre-arranged counseling sessions at selected international trade shows through the ShowTime program; and
- Providing multi-country advocacy on behalf of U.S. interests.

In addition, SCE offers a sub-regional approach for U.S. companies. Currently, these groupings include Central and Eastern Europe, Russia and the Newly Independent States; The Baltic Rim (Latvia, Lithuania, Estonia, Finland, Norway, Sweden, and Denmark); and Benelux (Belgium, Luxembourg, and Netherlands). Within the regional groupings there are programs for joint market research, trade promotion, conferences and trade missions, and other business formation services.

For more information on SCE and its services, see www.sce.gov or see the appendix for SCE contacts.

Domestic Operations These offices provide export counseling and marketing assistance to the U.S. business community through 1,800 trade experts located in 100 U.S. Export Assistance Centers (USEACs). The USEACs work closely with the Office of International Operation's overseas posts to facilitate transactions by linking U.S. suppliers with international buyers or partners. USEACs provide counseling to U.S. firms seeking to expand into international markets. USEACs help firms enter new markets and increase market share by identifying the best markets for their products; developing an effective market entry strategy aided by information generated from overseas offices; advising clients on practical exporting matters such as

[16] Including Western, Central, and Eastern Europe, as well as the Baltic Rim, Russia, and the Newly Independent States.

distribution channels, programs and services, and relevant trade shows and missions; and assisting with trade finance programs available through federal, state and local sectors.

US&FCS Services
More details on these services can be found on www.usatrade.gov.

Market Research

- **National Trade Data Bank (NTDB).** A "one-stop" source of international trade data collected by federal agencies, the NTDB contains over 190,000 trade-related documents, including market research reports, trade leads, trade contacts, statistical information, country reports, and more. It is available at federal depository libraries, can be purchased on CD-ROM, or can be accessed through the Internet at STAT-USA's World Wide Web site (www.stat-usa.gov). Call 1(800) STAT-USA to order or for more information.
- **Industry Sector Analysis (ISA).** ISAs are structured market research reports produced on location in leading overseas markets. Reports cover market size and outlook, characteristics, and competitive and end-user analysis for a selected industry sector in a particular country. ISAs are available on the National Trade Data Bank and on www.usatrade.gov.
- **International Market Insights (IMI).** IMIs are short profiles of specific foreign market conditions or opportunities prepared in overseas markets and at multilateral development banks. These non-formatted reports include information on dynamic sectors of a particular country. IMIs are available on the National Trade Data Bank and on www.usatrade.gov.

- ***Pinpoint Export Prospects***
- **Customized Market Analysis (CMA).** A CMA report assesses the market for a specific product or service in a foreign market. The research provides information on sales potential, competitors, distribution channels, pricing of comparable products, potential buyers, marketing venues, quotas, duties and regulations, and licensing or joint venture interest.
- **Trade Opportunity Program (TOP).** These are sales leads from international firms seeking to buy or represent U.S. products or services. TOP leads are printed daily in leading commercial newspapers and distributed electronically via STAT-USA.
- **Agent/Distributor Service (ADS).** ADS is a customized overseas search for qualified agents, distributors, and representatives for U.S. firms. Commercial officers abroad identify up to six foreign prospects that have examined the U.S. firm's product literature and expressed interest in representing the U.S. firm's products.

- ***Promote U.S. Firms' Products and Services Abroad***
- ***Commercial News USA.*** This export marketing magazine promotes U.S. products and services worldwide. Disseminated in print to screened agents,

distributors, buyers, and end-users and on-line to electronic bulletin board subscribers. Selected portions of *Commercial News USA* are reprinted in business newsletters in several countries.

- **Gold Key Service.** This custom-tailored service combines orientation briefings, market research, appointments with potential partners, interpreter service for meetings, and assistance in developing follow-up strategies. Gold Key Service is offered by the Commercial Service in export markets around the world.

- **Matchmaker Trade Delegations.** These "match" U.S. firms with prospective agents, distributors, and joint venture or licensing partners abroad. The Commercial Service staff evaluates U.S. firms' products and services marketing potential, finds and screens contacts, and handles all event logistics. U.S. firms visit the designated countries with the delegation and, in each country, receive a schedule of business meetings and in-depth market and finance briefings.

- **International Buyer Program (IBP).** This supports selected leading U.S. trade shows in industries with high export potential. Department of Commerce offices abroad recruit foreign buyers and distributors to attend the U.S. shows while program staff helps exhibiting firms make contact with international visitors at the show. The IBP achieves direct export sales and international representation for interested U.S. exhibitors.

- **Multi-State Catalog Exhibitions.** These showcase U.S. company product literature in fast growing markets within a geographic region. U.S. Department of Commerce staff and representatives from state development agencies present product literature to hundreds of interested business prospects abroad and send the trade leads directly to participants.

- **Trade Fair Certification.** This supports major international industry trade shows providing high-profile promotion of U.S. products. Certification encourages private organizers to recruit new-to-market, new-to-export U.S. exhibitors; to maintain Commerce Department standards for event; and to provide services ranging from advance promotion to on-site assistance for U.S. exhibitors.

The U.S. Department of Commerce's Information Communications & Technology (ICT) Team

The U.S. Department of Commerce's Information and Communications Technology (ICT) Team comprises IT market and industry specialists, from both US&FCS and TD, who work together to share information and provide comprehensive services to support U.S. IT firms' exporting efforts. ICT team members are located in US&FCS Export Assistance Centers in key geographic areas throughout the United States, in US&FCS offices abroad, and in TD IT-related offices in Washington, DC.

Members offer all U.S. Department of Commerce export promotion services mentioned above; in addition, the Team's structure and programs aim to meet the specific needs of firms in the IT industry. Team members' regional presence allows them to be accessible and responsive to the many small- and medium-sized IT firms and firm clusters around the United States. The formal network of IT-focused trade specialists located in the United States and abroad adds value to U.S. IT SMEs, as domestic team members can easily access foreign-based colleagues for the most updated information for U.S. firms on trade leads and quickly changing foreign market opportunities; in addition, domestic team members can provide input to foreign-based colleagues on market research topics of use to U.S. IT firms. Finally, the ICT Team constantly develops new export promotion programs specifically to meet the needs of firms in the rapidly changing IT industry.

ICT Team services currently include the following:

- Reports specific to IT firms' exporting needs, such as a forthcoming report on distribution channels and contacts in selected markets.
- Technology-based services for U.S. firms to reach potential buyers and partners, including international video-conferencing services and virtual trade shows on the US&FCS web site and at large IT trade shows such as World Telecom '99 (Geneva, Switzerland) and CeBIT 2000 (Hannover, Germany).
- The Show Time program, which allows U.S. IT firms to meet with ICT Team industry specialists at domestic and international trade shows to learn about international sales and marketing opportunities for high-tech products and services, receive country and industry briefings, matchmaking services, and other networking opportunities.
- Coordinated trade promotion activities in partnership with state and local governments, trade associations, and trade show organizers.
- A website with an estimated 2,000 links relating to the information technology industry, expected to increase to 4,000-5,000 links once a new site, presently under construction, is completed.

The ICT team website is under construction. For more information on the ICT Team, including team member contacts, see the ICT Team contact information in the appendix.

APPENDIX

CONTACTS: BELGIUM

United States Department of Commerce—The U.S. and Foreign Commercial Service

The U.S. Mission to the European Union (EU)

The U.S. Mission to the EU advises U.S. firms on technical and legal requirements of doing business in the EU Single Market of 15 countries and on how to take advantage of EU research, economic development, networking and other programs.

Charles Ford
Senior Commercial Officer
U.S. Mission to the European Union
13 Rue Zinner
1000 Brussels
Belgium
Phone: 32 2 508 2746
Fax: 32 2 513 1228
E-Mail: charles.ford@mail.doc.gov

Stewart J. Ballard
Commercial Attaché
U.S. Mission to the European Union
13 Rue Zinner
1000 Brussels
Belgium
Phone: 32 2 508 2746
Fax: 32 2 513 1228
E-Mail: stewart.ballard@mail.doc.gov

The U.S. Embassy in Belgium

The U.S. Embassy in Belgium is responsible for providing U.S. SME exporters with the full range of US&FCS assistance in researching, entering and expanding within Belgium.

George Knowles
Senior Commercial Officer
Showcase Europe ICT Coordinator
United States Embassy in Belgium
Boulevard Du Regent 27
1000 Brussels
Belgium
Phone: 32 2 508 2425
Fax: 32 2 512 6653
E-Mail: george.knowles@mail.doc.gov

Reginald A. Miller
Commercial Attaché and
Showcase Europe ICT Coordinator
United States Embassy in Belgium
Boulevard du Régent 27
1000 Brussels
Belgium
Phone: 32 2 508 2425
Fax: 32 2 512 6653
E-Mail: reginald.miller@mail.doc.gov

Nicole Pollet
Commercial Advisor
United States Embassy in Belgium
Boulevard de Régent 27
1000 Brussels
Belgium
Phone: 32 2 508 2456
Fax: 32 2 512 3644
E-Mail: nicole.pollet@mail.doc.gov

The EU Committee of the American Chamber of Commerce in Belgium

Roy Gentry
EU Affairs Manager
Avenue des Arts 50
1000 Brussels
Belgium
Phone: 32 2 513 68 92
Fax: 32 2 513 79 28
Internet: http://www.eucommittee.be
E-Mail: rge@post1.amcham.be

CONTACTS: GERMANY

U.S. Department of Commerce—The U.S. & Foreign Commercial Service

Peter Alois
Principal Commercial Officer
U.S. Consulate General
Siesmayerstrasse 21
60323 Frankfurt
Germany
Phone: 49 69 9562 0411
Fax: 49 69 561 114
Email: peter.alois@mail.doc.gov

Elizabeth Powell
Commercial Specialist, Financial Services
U.S. Consulate General
Siesmayerstrasse 21
60323 Frankfurt
Germany
Phone: 49 69 95 62 0417
Fax: 49 69 56 1114
E-Mail: elizabeth.powell@mail.doc.gov

John M. McCaslin
Principal Commercial Officer
U.S. Consulate General
Koeniginstrasse 5
80539 Munich
Germany
Phone: 49 89 28 88 750
Fax: 49 89 28 5261
Internet: http://www.us-embassy.de
E-Mail: john.mccaslin@mail.doc.gov

Doris Groot
Commercial Specialist, Software
U.S. Consulate General
Koeniginstrasse 5
80539 Munich
Germany
Phone: 49 89 28 88 749
Fax: 49 89 28 5261
Internet: http://www.us-embassy.de
E-Mail: doris.groot@mail.doc.gov

John Lumborg
Commercial Specialist,
Computer Hardware and Peripherals
U.S. Embassy
Neustaedtische Kirchstrasse 4-5
10117 Berlin
Germany
Phone: 49 30 8305 2736
Fax: 49 30 2045 4466
Email: john.lumborg@mail.doc.gov

Volker Wirsdorf
Commercial Specialist,
Telecommunications Equipment and Services
U.S. Consulate General
Siesmayerstrasse 21
60323 Frankfurt
Germany
Tel: 49 69 956 204 21
Fax: 49 69 561 114
Email: volker.wirsdorf@mail.doc.gov

Virginia Economic Development Partnership

Devin Miller
Manager, International Trade—Europe
Untermalnanlage 5
60329 Frankfurt
Germany
Phone: 49 69 27 39 9015
Fax: 49 69 27 39 9020
Internet: http://www.ExportVirginia.org
E-Mail: STATEofVIRGINIA@compuserve.com

Baden-Whttemberg Agency for International Economic Cooperation-GWZ

Heike Mhller-Sedlaczek
Project Manager
International Business Cooperation
Haus der Wirtschaft
Willi-Bleicher-Strasse 19
70174 Stuttgart
Germany
Phone: 49 711 2 27 87 20
Fax: 49 711 2 27 87 96
Internet: http://www.business.germany-southwest.com
E-Mail: heike.mueller-sedlaczek@gwz.de

Susanne Volpers
Head of Department
Foreign Market Access
Haus der Wirtschaft
Willi-Bleicher-Strasse 19
70174 Stuttgart
Germany
Phone: 49 711 2 27 87 30
Fax: 49 711 2 27 87 66
Internet: http://www.germany-southwest.de
E-Mail: gwz@gwz.de

MFG Media and Film Society Baden-Wuettemberg Media Development

Matthias Pfaff
Project Manager
Huberstra8e 4
70174 Stuttgart
Germany
Phone: 49 711 122 2849
Fax: 49 711 122 2845
Internet: http://www.mfg.de
E-Mail: pfaff@mfg.de

Dr. Ansgar Zerfa8
Director of Communications
Huberstra8e 4
70174 Stuttgart
Germany
Phone: 49 711 122 2856
Fax: 49 711 122 2845
Internet: http://www.mfg.de
E-Mail: zerfass@mfg.de

German Software Industry Association (Verband der Softwareindustrie) (VSI)

Miriam J. Hohenfeldt
Project Manager
Stievestra8e 7
80638 Munich
Germany
Phone: 089 29 16 02 93
Fax: 089 29 16 02 96

Questions concerning Germany's IT-related regulations may be directed to:

Regulierungsbehoerde fuer Telekommuniaktion und Pot (RegTp)
Aussenstelle Mainz
P.O. Box 8001
55003 Mainz
Germany
Phone: 49 6131 180
Fax: 49 6131 18 5616
Contact: Mr. Johannes Hein or Mr. Merzbach

CONTACTS: UNITED KINGDOM

U.S. Department of Commerce—The U.S. & Foreign Commercial Service

David Katz
Senior Commercial Officer
United States Embassy in the United Kingdom
24/31 Grosvenor Square
London W1A 1AE
United Kingdom
Phone: 44 171 408 8019
Fax: 44 171 408 8020
Internet: http://www.usembassy.org.uk/
E-Mail: david.katz@mail.doc.gov

Ivor Whitworth
Commercial Specialist,
Communication and Information Technologies
United States Embassy in the United Kingdom
24/31 Grosvenor Square
London W1A 1AE
United Kingdom
Phone: 44 171 408 8047
Fax: 44 171 408 8020
Internet: http://www.usembassy.org.uk/
E-Mail: ivor.whitworth@mail.doc.gov

United Kingdom Government

Michelle Gillen
North America NOW
Trade Promotion—Capital Goods
Department of Trade and Industry (DTI)
Kingsgate House
66-74 Victoria Street
London SW1E 6SW
United Kingdom
Phone: 44 171 215 4607
Fax: 44 171 215 8559
E-Mail: michelle.gillen@xpdv.dti.gov.uk

Confederation of British Industry

Andrew Moore
Head of Trade Association Affairs
Centre Point
103 New Oxford Street
London WC1A 1DU
United Kingdom
Phone: 44 171 395 8213
Fax: 44 171 240 1578
E-Mail: andrew.moore@cbi.org.uk

Software Business Network (SBN)

Andrew Wilder
Director
20 Red Lion Street
London WC1R 4QN
United Kingdom
Phone: 44 171 395 6739
Fax: 44 171 404 4119
Internet: http://www.sbn.org.uk
E-Mail: andrew.wilder@cssa.co.uk

Computer Software and Services Association (CSSA)

Tony Lewis
Executive Director
20 Red Lion Street
London WC1R 4QN
United Kingdom
Phone: 44 171 395 6700
Fax: 44 171 404 4119
Internet: http://www.cssa.co.uk
E-Mail: tony.lewis@cssa.co.uk

East of England Investment Agency (EEIA)
Renate Churcher
Project Manager
2 Quayside
Cambridge CB5 8AB
United Kingdom
Phone: 44 1223 45 0450
Fax: 44 1223 45 0451
E-Mail: renatechurcher@eeia.com

Scottish Trade International
William Gray
Market Development Executive
120 Bothwell Street
Glasgow G2 7JP
United Kingdom
Phone: 44 141 228 2681
Fax: 44 141 221 3712
E-Mail: william.gray@scotent.co.uk

Scottish Enterprise
Liz Ibbotson
120 Bothwell Street
Glasgow G2 7JP
United Kingdom
Phone: 44 141 228 2758
Internet: http://www.scotland.org
E-Mail: liz.ibbostson@scotent.co.uk

CONTACTS: UNITED STATES

U.S. Department of Commerce, Office of Computers and Business Equipment

Clay Woods
Division Director, Software
Office of Computers
U.S. Department of Commerce
Room 2806
Washington, D.C. 20230
Phone: (202) 482-0569
Fax: (202) 482-3002
E-Mail: robert_woods@ita.doc.gov
http://exportIT.ita.doc.gov

Danielle Kriz
International Trade Specialist
Software, Networking, and Internet Technologies
U.S. Department of Commerce
Room 2806
Washington, D.C. 20230
Phone: (202) 482-0568
Fax: (202) 482-3002
E-Mail: danielle_kriz@ita.doc.gov

U.S. Department of Commerce, Office of Telecommunications

Myles Denny-Brown
West Europe Regional Specialist
U.S. Department of Commerce
Room 4324
Washington, D.C. 20230
Phone: (202) 482-0398
Fax: (202) 482-5834
E-Mail: myles_denny-brown@ita.doc.gov
http://infoserv2.ita.doc.gov/ot/home.nsf

Virginia Economic Development Partnership

Matthias Duys
International Trade Manager
CIT Building
2214 Rock Hill Road
Herndon, VA 20170
Phone: (703) 689-3059
Fax: (703) 689-3056
E-Mail: mduys@vedp.state.va.us
Ext. E-Mail: VEDP_NOVA@hotmail.com

Tara Bennett
Senior International Trade Specialist
CIT Building
2214 Rock Hill Road
Herndon, VA 20170
Phone: (703) 689-3098
Fax: (703) 689-3056
E-Mail: tbennett@vedp.state.va.us

U.S. Department of Commerce, U.S. & Foreign Commercial Service, Northern Virginia Export Assistance Center

Sylvia Burns
Senior Information Technology Specialist
Northern Virginia Export Assistance Center
U.S. & Foreign Commercial Service
1616 North Fort Myer Drive
Suite 1300
Arlington, VA 22290-3106
Phone: (703) 524-2885
Fax: (703) 524-2649
E-Mail: sylvia.burns@mail.doc.gov

Tracy Savage
Information Technology Specialist
Northern Virginia Export Assistance Center
U.S. & Foreign Commercial Service
1616 North Fort Myer Drive
Suite 1300
Arlington, VA 22290-3106
Phone: (703) 524-2885
Fax: (703) 524-2649
E-Mail: tracy.savage@maildoc.gov

Ellen Moore
Information Technologies/Electronic Commerce/Internet Services
Northern Virginia Export Assistance Center
U.S. & Foreign Commercial Service
1616 North Fort Myer Drive
Suite 1300
Arlington, VA 22290-3106
Phone: (703) 524-2885
Fax: (703) 524-2649
E-Mail: ellen.moore@mail.doc.gov

U.S. Department of Commerce, ICT Team

Carmela Mammas
Newark Export Assistance Center
One Gateway Center, 9th Floor
Newark, NJ 07102
Phone: (973) 645-4682 ext 12
Fax: (973) 645-4783
Email: Carmela.Mammas@mail.doc.gov
Contact Carmela for a list of domestic and foreign ICT Team members.

TransAtlantic Business Dialog (TABD)

Eileen Hill
Office of European Union and Regional Affairs
U.S. Department of Commerce
Room 3513
Washington, D.C. 20230
Phone: (202) 482-5276
Fax: (202) 482-3045
E-Mail: eileen_hill@ita.doc.gov

TransAtlantic Small Business Initiative (TASBI)

Derek Parks
TASBI Specialist
U.S. Department of Commerce
Room 2112
Washington, D.C. 20230
Phone: (202) 482-0106
Fax: (202) 482-2526
E-Mail: derek.parks@mail.doc.gov

Candace Chan
TABD U.S. SME Chairperson
Power Clean 2000, Inc.
3710 Avalon Blvd.
Los Angeles, CA 90011-5600
Phone: (323) 235-2000
Fax: (323) 235-6259
E-Mail: candace@powerclean2000.com

United Kingdom Embassy

Terry Shear
Trade Promotion—Assistant Commercial Officer
3100 Massachusetts Ave., NW
Washington D.C. 20008-3600
Phone: (202) 588-6691
Fax: (202) 588-7915
E-Mail: terry.shear@washington.mail.fco.gov.uk

For questions or information regarding the harmonization of regulations, standards and business systems within the EU, contact:

Single Internal Market Information Services
Office of European Community Affairs
Room 3036
International Trade Administration
U.S. Department of Commerce
Washington, DC 20230
Phone: (202) 482-5823
Fax: (202) 482-2155

REGIONAL ECONOMIC DEVELOPMENT AGENCIES: GERMANY

BADEN-WUERTTEMBERG

Baden-Whrttemberg Agency for International Economic Cooperation
Willi-Bleicher-Str. 19
70174 Stuttgart
Germany
Tel: 49 711 2 27 87 0
Fax: 49 711 2 27 87 0
Email: gwz@gwz.de
Internet: http://www.gwz.de
http://www.business.germany-southwest.de
Managing Director: Dr. Michael Hagemeyer

The Media and Film Society of Baden-Wuerttemberg
Huberstrasse 4
70174 Stuttgart
Germany
Tel: 49 711 122 2856
Fax: 49 711 122 2845
Email: zerfass@mfg.de
Contact: Dr. Ansgar Zerfass

Software-Zentrum Boeblingen/Sindelfingen e.V.
Otto-Lilienthal-Strasse 36
71034 Boeblingen
Germany
Tel: 49 7031 714 700
Fax: 49 7031 714 705
Email: schofer@softwarezentrum.de
Contact: Dietmar Schofer

Technologiesfabrik Karlsruhe
Haid-und-Neu-Strasse 7
76131 Karlsruhe
Germany
Tel: 49 721 965 8250
Fax: 49 721 965 8268
Email: hoffman@technologiefabrik-ka.de
Contact: Herbert Hoffman

BAYERN

Bayerisches Staatsministerium fhr Wirtschaft, Verkehr
und Technologie Referat Industrieansiedlug, Standortmarketing
Bavarian Ministry for Economic Affairs, Transport and Technology
Prinzregentenstr 28
80538 Munich
Germany
Tel: 49 89 21 62 26 42
Fax: 49 89 21 62 28 03
Email: locate-in-bavaria@t-online.de
Internet: http://www.stmwvt.bayern.de

BERLIN

Wirtschaftsf`rderung Berlin GmbH
Berlin Economic Development Corporation
Ludwig Erhard Haus
Fasanenstra8e 85
10623 Berlin
Germany
Tel: 49 30 3 99 80 0
Fax: 49 30 3 99 80 2 39
Email: info@wf-berlin.de
Internet: http://www.berlin.de
Managing Director: Dr. Hans Estermann

BRANDENBURG

Wirtschaftshaftsf`rderung Brandenburg GmbH
Brandenburg Economic Development Corporation
Am Lehnitzsee
14476 Neu Fahrland
Germany
Tel: 49 33208 55 0
Fax: 49 33208 55 1 00
Email: info@wfb.brandenburg.de
Internet: http://www.brandenburg.de
Chairman: Knut Solzbacher
President: Leonardo G. Noto

BREMEN

BBI Bremen Business International GmbH
Foreign Econominc Development Corporation of State of Bremen
World Trade Center Bremen
Birkenstr. 15
28195 Bremen
Germany
Tel: 49 421 174 66 0
Fax: 49 421 1 74 66 22
Email: bbi@bremen-business.de
Internet: http://www.bremen-business.de
Chief Executive Officer: Wolfgang Hofmann
Chief Executive Officer: Helmut H. Detken

WFG Bremer Wirtschaftsf`rderung GmbH
Economic Development Corporation Bermen
Hanseatenhof 8
28195 Bremen
Germany
Tel: 49 421 3 08 85 0
Fax: 49 421 3 08 85 44
Email: mail@bremen-wfg.de
Internet: http://www.bremen-wfg.de
Managing Director: Harald Matys

HAMBURG

HWF-Hamburgishe Gesellschaft fhr Wirtschaftsf`rdergun mbH
Hamburg Business Development Corporation
Hamburger Str. 11
22083 Hamburg
Germany
Tel: 49 40 22 70 19 0
Fax: 49 40 22 70 19 29
Email: Info@hwf-hamburg.de
Internet: http://www.hamburg.de
Chairman of the Board: Dr. Dietmar Dhdden
Managing Director: Ghnter Borgmann

HESSEN

HLT Wirschaftsf`rderung Hessen Investitionsbank AG
HLT Economic Development Hessen
Abraham-Lincoln-Str. 38-42
65189 Wiesbaden
Germany
Tel: 49 611 7 74 0
Fax: 49 611 7 74 2 65
Email: info@hlt.de
Internet: http://www.hlt.de
Board Members: Karlheinz Zahn and Joachim Lauterbach

MECKLENBURG-VORPOMMERN

Gesellschaft fhr Wirtschaftsf`rderung
Mecklenburg-Vorpommern mbH
Economic Development Corporation Mecklenburg-Vorpommern
Schlo8gartenallee 15
19061 Schwerin
Germany
Tel: 49 385 5 92 25 0
Fax: 49 385 5 92 25 22
Email: connect@gfw-mv.de
Internet: http://www.gfw-mv.de
Managing Director: Jhrgen Michael Gahrau

NIEDERSACHEN

IPA Niedersachen-Investment Promotion Agency
Hamburger Allee 4
30161 Hannover
Germany
Tel: 49 511 34 34 66
Fax: 49 511 3 61 59 09
Email: 73360.2071@compuserve.com
Managing Director: Dr. Klaus von Voigt

NORDRHEIN-WESTFALEN

Gesellschaft fhr Wirtschaftsf`rderung
Nordrhein-Westfalen mbH (GfW)
Economic Development Corporation Nordrhein-Westfalen
Kavalleriestr. 8-10
40213 Dhssenldorf
Germany
Tel: 49 211 1 30 00 0
Fax: 49 211 130 33 54
Email: gfw@gfw-nrw.de
Internet: http://www.grw-nrw.de
Managing Director: Dr. Rainer Buhr
Managing Director: Dr. Michael Kolmar

RHEINLAND-PFALZ

Investitions- und Strukturbank Rheinland-Pfalz (ISB) GmbH Standortmarketing, Betriebsansiedlung
Investment and Economic Structure Bank of Rheinland-Pfalz
Wilhem-Theodor-R`mheld-Str. 22
55130 Mainz
Germany
Tel: 49 6131 9 85 2 00
Fax: 49 6131 9 85 2 99
Email: isb-standortinfo@isb.rlp.de
Internet: http://www.isb.rlp.de
Executive Vice President: Dr. Gregor Weiner

SAARLAND

Gesellschaft fhr Wirtschaftsf`rderung Saar mbH
Saarland Economic Promotion Corporation
Trierer Str. 8
66111 Saarbrhcken
Germany
Tel: 49 681 99 65 4 00
Fax: 49 681 99 65 4 44
Email: gwsaar@t-online.de
Internet: http://www.gwsaar.com
Managing Director: Thomas Schuck

SACHSEN

Wirtschaftsf`rderung Sachen GmbH
Saxony Economic Development Corporation
Bertolt-Brecht-Allee 22
01309 Dresden
Germany
Tel: 49 351 31 99 10 00
Fax: 49 351 31 99 10 99
Email: info@wfs.saxony.de
Internet: http://www.sachsen.de
Chairman of the Board: Dr. Ghnter Metzger
Managing Director: Dr. Harald R`thig

SACHSEN-ANHALT

Wirtschaftsf`rderungsgesellschaft fhr das Land Sachsen-Anhalt mbH
Business Promotion and Development Company Saxony-Anhalt
Schleinufer 16
39104 Magdeburg
Germany
Tel: 49 391 5 68 99 0
Fax: 49 391 5 68 99 50
Email: welcome@wisa.de
Internet: http://www.wisa.sachsen-anhalt.de
Managing Director: Marcus Tolle

SCHLESWIG-HOLSTEIN

Wirtschaftsf`rderung Schleswig-Holstein GmbH (WSH)
Business Development Corporation of Schleswig-Holstein
Lorentzendamm 43
24103 Kiel
Germany
Tel: 49 431 5 93 39 0
Fax: 49 431 55 51 78
Email: info@wsh.de
Internet: http://www.wsh.de
Managing Director: Volker Haufler
Managing Director: Werner Koopmann

TH g RINGEN

Landesentwicklungsgesellschaft Thhringen mbH
State Development Corporation of the Free State of Thuringia Ltd.
Mainzerhofstr. 12
99084 Erfurt
Germany
Tel: 49 361 56 03 0
Fax: 49 361 56 03 3 33
Email: leg-thueringen@t-online.de
Internet: http://leg.th-online.de
Chairman of the Board of Directors: Reinhold Stanitzek

REGIONAL ECONOMIC DEVELOPMENT AGENCIES: UNITED KINGDOM

NORTH EAST ENGLAND

One North East
Great North House
Sandyford Road
Newcastle-upon-Tyne NE1 8ND
United Kingdom
Tel: 44 191 261 0026
Fax: 44 191 232 9096
Email: newcastle@nordev.co.uk
Chief Executive: Michael Collier
Chairman: Dr. John Bridge

NORTH WEST ENGLAND

North West Development Agency
Muirfield House
Kelvin Close
Birchwood
Cheshire WA3 7PB
United Kingdom
Tel: 44 1925 830 022
Fax: 44 1925 830 456
Email: info@inward.co.uk
Internet: http://www.inward.co.uk
Contact: Nigel Wilcock, Investments Manager
Chief Executive: Mike Shields

YORKSHIRE & HUMBERSIDE

Yorkshire Forward
Westgate House
100 Wellington Street
Leeds LS1 4LT
United Kingdom
Tel: 44 113 243 9222
Fax: 44 113 243 1088
Email: info@yhda.co.uk
Contact: Jon Moore, Head of Marketing

WEST MIDLANDS

West Development Agency
1500 Solihull Parkway
Birmingham Business Park
Birmingham B37 7YD
United Kingdom
Tel: 44 121 717 0909
Fax: 44 121 717 0720
Contact: Paul Richards, Chief Excutive

Advantage West Midlands
2 Priestley Wharf
Halt Street
Aston Science Park
Birmingham B7 4BZ
United Kingdom
Tel: 44 121 380 3500
Chief Executive: Tony Cassidy

EAST MIDLANDS

East Midlands Development Company
2/4 Weekday Cross
Nottingham NG1 2GB
United Kingdom
Tel: 44 115 952 7870
Fax: 44 115 952 0539
Email: emdcwelcome@attmail.com
Contact: John Finch, Chief Executive

East Midlands Development Agency
Apex Court
City Link
Nottingham NG2 4LA
United Kingdom
Tel: 44 115 988 8300
Fax: 44 115 988 8511
Chief Executive: Martin Briggs

EAST OF ENGLAND

East of England Investment Agency
2 Quayside
Bridge Street
Cambridge CB5 8AB
United Kingdom
Tel: 44 1123 450 450
Fax: 44 1223 450 451
Email: solution@eeia.com
Chief Executive: James Gray

LONDON

London First Centre
1 Hobhouse Court
Suffolk Street
London SW1Y 4HH
United Kingdom
Tel: 44 171 655 1500
Fax: 44 171 655 1501
Email: abarlow@lfc.co.uk
Internet: http://www.lfc.co.uk
Contact: Anna Barlow, Communications
Chief Executive: Stephen O'Brein
Managing Director: Michael Charlton

SOUTH EAST ENGLAND

South East Regional Investment Limited (SERIL)
30 Alan Turing Road
Surrey Research Park
Guildford
Surrey GU2 5YF
United Kingdom
Tel: 44 1483 406 900
Fax: 44 1483 406 901
Email: invest@seril.co.uk
Contact: Mike Gooch, Operations Director

SEEDA
Cross Lanes
Guildford
Surrey GU1 1YA
United Kingdom
Tel: 44 1483 484 200
Fax: 44 1483 484 247
Chief Executive: Anthony Dunnett
Director: Karen Yeomans

SOUTH WEST ENGLAND

South West of England RDA
5 Greeways Business Park
Bellinger Close
Chippenham
Wiltshire SN15 1BN
United Kingdom
Tel: 44 1249 461 010
Fax: 44 1249 463 626
Email: invest@westofengland.co.uk
Internet: www.westofengland.co.uk
Contact: George Cowcher, Operations Manager
Chief Executive: Jill Barrow

Devon and Cornwall Development International
2 Derriford Park
Derriford Plymouth
Devon PL6 5QZ
United Kingdom
Tel: 44 1752 793 379
Fax: 44 1752 788 660
Email: Ian@dcdi.co.uk
Internet: http://www.dcdi.co.uk
Contact: Ian Jones

WALES

Welsh Development Agency
Principality House
The Friary
Cardiff CF1 4AE
United Kingdom
Tel: 44 345 775 566
Fax: 44 1443 845 589
Email: enquiries@wda.co.uk
Internet: http://www.wda.co.uk

NORTHERN IRELAND

Industrial Dev. Board Northern Ireland
IDB House
64 Chichester Street
Belfast B41 4JX
United Kingdom
Tel: 44 1232 233 233
Fax: 44 1232 535 000
Email: ccu@idb.dedni.gov.uk
Internet: http://www.idbhi.co.uk
Contact: Martin Graham
Chief Executive: Bruce Robinson

SCOTLAND

Locate in Scotland
120 Bothwell Street
Glasgow G2 7JP
United Kingdom
Tel: 44 141 248 2700
Fax: 44 141 221 5129
Internet: http://www.lis.org.uk
Contact: David Macdonald, Director

RELEVANT AMERICAN CHAMBERS OF COMMERCE ABROAD

American Chamber of Commerce in the United Kingdom
75 Brook Street
London W1Y 2EB
United Kingdom
Tel: 44 171 493 0381
Fax: 44 171 493 2394
Toll Free from U.S.: 1-888-592-9051
Web Page: http://www.amcham.org.uk/

American Chamber of Commerce in Germany e.V.
Rossmarkt 12
60311 Frankfurt/M
phone 49 69 92 91 04 0
fax 49 69 92 91 04 11
Email: amcham@amcham.de
Web Page: http://www.amcham.de

American Chamber of Commerce in Belgium (useful for EU-wide information)
Avenue des Arts 50
Box 5
1000 Brussels
Belgium
Tel. 32 2 513 67 70
Fax. 32 2 513 35 90
E-mail: gch@post1.amcham.be
Web Page: http://www.amcham.be/

U.S. Chamber of Commerce Main Web page:
http://www.uschamber.com/

SELECTED IT-RELATED EUROPEAN TRADE EVENTS

Information & Communication Technology

For a complete, updated listing of all U.S. and Foreign Commercial Service Showcase Europe-supported European IT and non-IT trade events, see the Showcase Europe web site at www.sce.doc.gov.

SCE-ICT CATALOG SHOWCASE FOR THE CEE

(Catalog Show)

DESCRIPTION OF EVENT: The catalogs of U.S. telecommunications companies recruited for World Telecom 99 in Geneva will be given additional exposure in the Central and Eastern European countries where the markets are opening for competition.

DATE: November 1999 through September 2000
PLACE: Four Stops in Eastern Europe (to be announced)

CONTACTS:	SCO	FSN	SCE Industry Sector Coordinator
	Jim Joy	Aschi Hegg	George Knowles
	American Embassy	American Embassy	American Embassy
	Bern	Bern	Brussels
	Tel: 41 31 3577 270	Tel: 41 31 3577 343	Tel: 32 2 5082 425
	Fax: 41 31 3577 336	Fax: 41 31 3577 336	Fax: 32 2 5126 653

CeBIT 2000

(Trade Fair)

DESCRIPTION OF EVENT: CeBIT is the world=s largest trade show for information technology. The show has over 490,000 sq. meters of exhibition space with approximately 650,000 trade visitors and more than 7,000 exhibitors.

DATE: February 24 - March 1, 2000
PLACE: Hannover, Germany
CONTACTS:

SCO	FSN	SCE Industry Sector Coordinator
Kay R. Kuhlman	John T. Lumborg	George Knowles
American Embassy	American Embassy	American Embassy
Berlin	Berlin	Brussels
Tel: 49 30 8305 2730	Tel: 49 30 8305 2730	Tel: 32 2 5082 425
Fax: 49 30 2045 4466	Fax: 49 30 2045 4466	Fax: 32 2 5126 653

SVYAZ/EXPOCOMM MOSCOW

(Trade Fair)

DESCRIPTION OF EVENT: Svyaz/ExpoComm is the largest telecommunications and information technology trade show in the Commonwealth of Independent States with the exhibition space of 18,000 square meters. Participants of Svyaz/ExpoComm include approx. 500 companies (300 companies from Russia and about 200 companies from over 30 countries of the world). Svyaz/ExpoComm co-exists with many conference, seminars, and presentations.

DATE: May 8-12, 2000
PLACE: Moscow, Russia
CONTACTS:

SCO	FSN	SCE Industry Sector Coordinator
David Knuti	Maria Breiter	George Knowles
American Ambassy	American Ambassy	American Ambassy
Moscow	Moscow	Brussels
Tel: 7 095 737 5016	Tel: 7 095 737 5039	Tel: 32 2 5082 425
Fax: 7 095 737 5033	Fax: 7 095 737 5033	Fax: 32 2 5126 653

FURTHER INFORMATION ON TRADE AGREEMENTS AND REGULATIONS

Trade Agreements

For further information on the Information Technology Agreement contact:

Danielle Kriz
Office of Computers and Business Equipment (OCBE)
International Trade Administration
U.S. Department of Commerce
202-482-0568
danielle_kriz@ita.doc.gov
or see the OCBE web site at http://exportIT.ita.doc.gov

For further information on the Basic Telecommunications Agreement contact:

Dan Edwards
Telecommunications Services Specialist
Office of Telecommunications
International Trade Administration
U.S. Department of Commerce
202-482-4331
daniel_edwards@ita.doc.gov

For further information on the U.S.-EU Mutual Recognition Agreement contact:

Myles Denny-Brown
Western Europe Regional Specialist
Office of Telecommunications
International Trade Administration
U.S. Department of Commerce
202-482-0398
myles_denny-brown@ita.doc.gov

European Community Directives

For detailed information on how to get the CE mark for the EU's EMC, Low Voltage, R&TTE, or any other directives contact:

Robert Straetz
Office of European Union and Regional Affairs
International Trade Administration
U.S. Department of Commerce
202-482-4496
Robert_Straetz@ita.doc.gov

U.S. exporters should note that Europe has an ongoing program to develop new standards for the EMC and Low Voltage Directives which could, at some point, replace existing standards. To keep up with new standards issued by the European Union, U.S. exporters can either call the Office of European Union Affairs at 202-482-4496 or access the information on the following web site: http://www.newapproach.org/

For further information on the pending Waste from Electrical and Electronic Equipment Directive contact:

Office of European Union and Regional Affairs
International Trade Administration
U.S. Department of Commerce
202-482-5276
or see
http://www.svtc.org/cleancc/weeedir.htm

For further information on the Data Protection Directive contact:

Barbara Welberry
Special Counsellor to the Under Secretary for Electronic Commerce
International Trade Administration
U.S. Department of Commerce
202-482-1614
barbara_wellbury@ita.doc.gov

The U.S. Department of Commerce's Electronic Commerce Task Force has information on the Data Protection Directive (DPD) and on how to guide U.S. organizations to help them comply with its requirements. The site also lists frequently asked questions about the DPD and how it is applied.

See www.ita.doc.gov and click on "Safe Harbor Principles Released".

For further information on the Telecommunications Directive contact:

Myles Denny-Brown
Western Europe Regional Specialist
Office of Telecommunications
International Trade Administration
U.S. Department of Commerce
202-482-0398
myles_denny-brown@ita.doc.gov

For further information on the pending Directive on Certain Legal Aspects of E-Commerce contact:

Stewart Ballard
Commercial Attaché
U.S. Mission to the European Union
40 Boulevard du Regent
1000 Brussels
Belgium
32 2 508 2755
32 2 513 1228 (fax)
stewart.ballard@mail.doc.gov

For further information on the pending Directives on Digital Signatures and Encryption contact:

Brian Hengesbaugh
Office of General Counsel
International Trade Administration
U.S. Department of Commerce
202-482-4620
Brian_Hengesbaugh@ita.doc.gov

REFERENCES

GERMANY

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THE UNITED KINGDOM

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LIST OF CONTRIBUTORS

Belgium

The EU Committee of the American Chamber of Commerce in Belgium
PriceWaterhouseCoopers
U.S. and Foreign Commercial Service, U.S. Department of Commerce

Germany

Baden-Wurttemberg Agency for International Economic Development
Baden-Wurttemberg Bank AG
Baden-Wurttemberg Media Development
Brokat
Chamber of Commerce for Munich and Upper Bavaria
Computerwoche Verlag GmbH
Dresden Kleinworth Benson North America LLC
Equant Network Services
Facilicom Telekommunikation GmbH
German Electrical and Electronic Manufacturers' Association
German Software Industry Association
German Telecommunications Manufacturers' Association
KWH Consult GmbH
Lotus Development GmbH
MCIWorldCom International Deutschland GmbH
Media Group
Reuters AG
SAP
Software-Zentrum Boblingen/Sindelfigen
State of Virginia
Technologiefabrik Karlsruhe
U.S. and Foreign Commercial Service, U.S. Department of Commerce
Xybernaut

United Kingdom

Admiral PLC
British Telecom
Business Links
Computer Software and Services Association
Confederation of Business Industry
Department of Trade and Industry
East of England Investment Agency
FocusNet
Forthright Innovation
GBD Direct

IBM
Interactive Media Alliance Scotland
International Investment Bureau of Britain
Internet Service Providers Association
Internet Society of Scotland
Jupiter Communications
Scottish Enterprise
Scottish Software Federation
Scottish Trade International
Services to Software, Ltd.
Sidley & Austin
Software Business Network
U.S. and Foreign Commercial Service, U.S. Department of Commerce
UUNet